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JUN 25 1951
DETROIT

INSIDE DOPE

By GEORGE F. TAUBENECK

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Political Stories

Roommates at Amherst were Calvin Coolidge and Dwight Morrow. They did quite well in later life. Coolidge, of course, became President of the United States; while Morrow amassed a large fortune, and later was appointed Ambassador to Mexico.

Morrow loved to tell stories about Coolidge, especially the one about the cat and the hash. Seems that a huge black cat was a pampered pet of the Amherst boarding house where they lived. One night hash was served for dinner. Calvin apparently didn't like the looks of it.

"Get me the cat," he ordered the waitress.

Everybody figured he was going to feed the stuff to Old Tom. The cat was brought in, and Coolidge looked at it momentarily.

"Good," he said. "Glad to see you."

And tackled the hash.

Figure It Out

"What's your brother-in-law complaining about?" jangled the Tammanyite. "He's all set, isn't he? Got a good job. All he has to do is tear off a page from the Commissioner's calendar every month."

"My brother-in-law, he ain't bein' treated fair," objected a minor ward-heeler. "He wants overtime pay for February!"

Mistaken Identity

First time voting machines were introduced into his tough precinct a Tammany little-wig saw to it that the straight-Democratic-ticket key was smeared with black printers' ink at regular intervals.

All voters were greeted by Mr. Little-Wig as they left the polls. He shook hands with them and looked carefully. Those whose thumbs or index fingers were smudged he paid off; those with lilywhite fingers were either glared at or treated roughly by burly henchmen.

One of the roughed-up voters protested bitterly.

"I voted Democrat," he whined to the burly boys. "Look: I'm left-handed. The smear is over here."

Smart Guy

From the rear platform of his special train a candidate made the eagle scream and, (to compound old cliches) the welkin rang.

"Wait till he asks if there are any questions," smirked a joker in the crowd. "I'll see if he knows what town this is."

Caught and Cornered

Candidate A found Candidate B sounding off about Wall Street and "the rich" in front of a chain grocery store.

"Money is a fine thing, despite what you say," interrupted Candidate A. "Furthermore, there's an honest way to make money."

"Oh yeah?" jeered the demagogue on a soapbox. "Tell us how."

"Ha! ha!" laughed Candidate A. "I was sure you wouldn't know."

"You are charged," thundered Judge Murphy, "with pushing your mother in law out of a ten-story window."

(Concluded on Page 6, Column 1)

'No Lower Prices Possible' Say Appliance Makers In Face of Slow Mart Activity

CHICAGO—In what seemed to be the "lightest" Home Furnishings Market since the end of the War, the Mid-year Markets opened here June 18 in a general air of confusion on the part of both manufacturers and retailers over the state of the household refrigerator and major appliance business.

From the welter of "official" statements, individual opinions, and widely varying "estimates" the following is one reporter's summary of the situation:

1. There are substantial quantities of refrigerators, higher-priced ranges, and some lines of conventional washers "in the pipelines" which must be liquidated at the retail level before more can be bought from the producers. Most of the manufacturers, however, claim they have only "normal" inventories.

2. Home freezers and home laundry driers are still in brisk demand. Some producers report a noticeable increase in the demand for small freezers, indicating activity in the urban market.

3. Automatic washers and the smaller and lower-priced range models remain in pretty fair demand.

4. There is no indication that manufacturers will lower refrigerator and other major appliance prices. Almost all of them are reporting to OPS that they are now selling at prices lower than the ceiling that their cost figures could justify, and many plants are being faced with increased wage demands ranging up to 9 cents per hour.

5. At the present time there is not much movement towards any further contraction of lines (reduction in the number of models). In fact, some manufacturers have recently put back into the line some models which they had taken out earlier in the year.

6. There were few new models of appliances introduced. Most notable was the Norge 9-lb. capacity free-standing automatic washer; two new two-door two-temperature Gibson refrigerators; a new home freezer line by King Refrigerator; a new Presteline built-in electric range; a new Kalamazoo 30-in. range.

7. There is little likelihood that any outstanding design changes will come to light in 1952 models of refrigerators and other appliances. Manufacturers are not in the mood to spend money tooling up for a product when they have no assurance that materials to make it will be available.

8. New promotion gimmicks will be aimed at getting the dealer "out and selling." Most new promotions are aimed as much at stimulating action by the dealer as they are in stirring buying interest among consumers. "The promoting dealer is still selling," is the war cry of several sales managers.

On the new products, stories about

(Concluded on Page 25, Column 3)

ACRMA Elects Smith, Of Baker, President

HOT SPRINGS, Va.—Climaxing three days of meetings here recently, the Air Conditioning & Refrigerating Machinery Association elected as its new president Fred W. Smith, president of Baker Refrigeration Corp.

F. W. Smith

Elected as ACRMA vice presidents were C. S. Stackpole, vice president and general sales manager of Airtemp Div., Chrysler Corp., and H. B. Donley, manager of marketing, General Electric Co., Bloomfield, N. J.

G. A. Heuser, president, Henry Vogt Machine Co., was reelected ACRMA treasurer.

Widely known for his activity in industry affairs for the past 25 years, Smith was formerly associated with Carrier Corp. and the Frigidaire

(Concluded on Back Page, Column 5)

King Refrigerator Has New Home Freezer Line

GLENDALE, L. I., N. Y.—A new line of home and farm freezers "so built as to go through any door" will be introduced by King Refrigerator Corp. here.

None of the three models in the line will be more than 27¾ in. deep over-all which means, says King's Vice President Harold Bassoff, that they can go through many less-than-standard-width doors with ease.

King is planning to offer three models: a 4-cu. ft. model at $209.95; an 8-cu. ft. model at $259.95; and a 13-cu. ft. model at $399.95.

The 13-cu. ft. model is distinguished by a Formica top work area located at one end of the top.

It is planned to start delivery on the 4-cu. ft. model in the next 45

(Concluded on Page 4, Column 5)

ASHVE To Meet In Portland July 2-4

PORTLAND, Ore.—Panel heating and cooling, warm air heating, and the heat pump will be the chief topics of discussion at the three technical sessions during the semi-annual meeting July 2 through 4 here of the American Society of Heating and Ventilating Engineers.

The sessions will be held in the mornings at the Multnomah hotel, leaving the rest of the day free for visits to such scenic spots as Multnomah Falls, the Columbia river gorge, and Bonneville dam.

To supplement the papers on the heat pump, inspection trips have been arranged to the country's two largest heat pump installations serving the *Oregonian* and Equitable buildings.

A luncheon for both the men and ladies on Tuesday, July 3, will be highlighted by an address by Dean G. W. Gleeson of the School of Engineering and Industrial Arts of Oregon State college. Dean Gleeson's subject will be "Energy—Choose It Wisely for Safety Tomorrow."

Among the papers to be presented will be one incorporating the results of studies made at the ASHVE Lab-

(Concluded on Page 25, Column 1)

Horne Heads Rheem's Refrigerator Sales

NEW YORK CITY—Appointment of Carl H. Horne, formerly vice president of Alabama Gas Corp., as sales manager of its new refrigerator division has been announced by Rheem Mfg. Co.

The appointment is in line with Rheem's plan to develop and market a gas-operated refrigerator. The company announced late last year that it was preparing to produce a new gas-absorption type of household refrigerator developed by Clayton & Lambert Mfg. Co.

Horne, who will head the sales division being set up to plan distribu-

(Concluded on Page 4, Column 5)

Refrigeration and Cooling Producers Only Use DO-75

WASHINGTON, D. C.—DO-75 priority ratings may be used by *producers* of certain refrigeration and air conditioning equipment to get needed supplies of steel, copper, and aluminum during the third quarter, A. Gordon Wootton of the National Production Authority declared recently.

Wootton is chief of the NPA's commercial and industrial refrigeration and air conditioning section, general services branch, machinery division.

He emphasized that producers only are authorized to use this rating and that it is not extended to contractors or installation firms, as has been rumored about the trade.

He pointed out that the ratings apply only to certain refrigeration and air conditioning items. These are:

- compressors and compressor units
- condensing units
- heat exchangers
- steam and water fin coils except forced air
- evaporative condensers
- shell and tube and shell and coil condensers
- shell and tube and shell and coil liquid coolers

(Concluded on Page 4, Column 4)

Gibson Bows 2-Door, 2-Temp Models

GREENVILLE, Mich.—Two new two-door two-temperature refrigerators and a new home freezer model are being previewed to dealers by Gibson Refrigerator Co., it is announced by J. L. Johnson, vice president in charge of Gibson sales.

One of the principal features of the new two-door refrigerators is that each of the separate sections has its own control setup—and own control dial.

Both models provide 10-cu. ft. storage capacity. Deluxe model TD-1091 carries a suggested retail price of $529.95. Model TD-1021 carries a suggested retail price of $479.95.

The upper section or freezer compartment in each model will have more than 2 cu. ft. of storage space—adequate for 73.5 lbs. of food. This compartment can be maintained at temperatures ranging from 0° F. to -15° F., thus making it available for

(Concluded on Page 4, Column 2)

Congress May Ease Consumer Credit Controls

House Committee Votes for 15% Down, 18 Months To Pay on Appliances

WASHINGTON, D. C.—Rushing to complete an extension to the Defense Production Act by the July 1 deadline, Congressional committees approved some easing of consumer credit controls and voted to knock out price rollbacks on any item under price control regulations.

At press time, however, neither the House nor the Senate had passed their extension bills. After the bills are passed, then a joint committee representing both houses must iron out differences between the two versions before the final bill can be sent to the president for his approval.

The House banking committee voted to limit the amount of down payment that the Federal Reserve Board could require under Regulation W and to put a floor under the required number of months to pay the balance.

For household appliances, radios, and television sets, the committee set 15% as the maximum down payment the FRB could demand and 18 months as the shortest time the board could ask for paying off the balance. Regulation W now demands a 25% down payment with 15 months to pay.

The Senate banking committee, on the other hand, did not touch credit restrictions on household appliances. It limited itself to a slight easing of automobile credit.

Where the House committee only placed a ban on rollbacks of beef prices the Senate committee also banned rollbacks on any item under regulation.

The text of the Senate committee's provision read as follows:

"No ceiling price shall become effective which is below the lower (alternative) (a) the price prevailing just before the date of issuance of the regulation or order establishing such ceiling price, or (b) the price prevailing during the period Jan. 25, 1951 to Feb. 24, 1951, inclusive."

The Senate banking committee voted to extend wage, price, and credit controls for only nine months rather than the two years that President Truman asked.

CPR Rule 4 Amendment Will Ease Profit Squeeze

WASHINGTON, D. C.—Dealers handling electrical housewares, radios, television sets, and other items covered by Ceiling Price Regulation were granted relief from a "happenstance" profit squeeze contained in Rule 4 of the regulation.

As originally written, this rule required the retailer when pricing an item for which he had no net cost on his pricing chart and which falls between two listed net costs to use either the percentage markup applicable to the next lower net cost on

(Concluded on Page 4, Column 3)

OPS Meat Ceilings May Force Consumers To Buy, Freeze, and Store Wholesale Cuts

CHICAGO—The independent grocer operating a meat department doesn't like the OPS meat ceiling price regulations—to the point of threatening to quit selling retail cuts of beef.

This situation—and in fact the whole matter of controls on food prices, can have important repercussions for the refrigeration industry. It may mean that more and more consumers will buy meat in wholesale cuts, have it processed and frozen by a retail meat store or locker plant, and purchase larger home low temperature storage units to keep adequate supplies on hand in the home.

All this came to light during the 52nd annual convention of the National Association of Retail Grocers and the International Food and Fixtures Exposition, held at Navy Pier here.

The food store operators object not so much to the actual price controls on meat as they do to the regulations which describe how beef is to be cut and labeled.

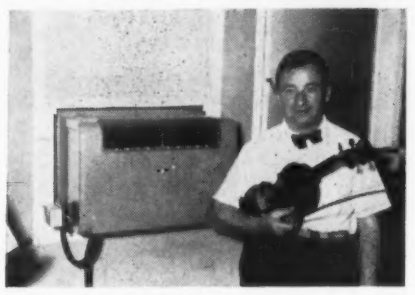
"I have had a side of beef cut in the manner described by OPS and I can prove that I can't get back the wholesale price I paid for it," said one food store operator.

"It's impossible to sell cube steaks under these regulations," another merchant claimed. "We'll have to become 'legal' black market operators to operate under such regulations."

"What will we fill our meat cases with—what can we do to make our meat department pay off," wailed another.

Something that a retail meat department operator can do was outlined by Roman Feldpausch, head of G & R Feldpausch Co., a supermarket

(Concluded on Back Page, Column 1)



VALUABLE VIOLINS and music albums are protected from high humidity in San Juan, Puerto Rico, by a Frigidaire window air conditioner.

Window Unit Helps To Preserve Music Library

SAN JUAN, P. R.—Preserving the quality of two expensive violins and preventing mildew on a library of valuable music albums and books is the job that has been assigned to a ½ hp. window air conditioner in the home of Joseph Westman here.

Westman was troubled by the particularly high humidity in the Santurce area of San Juan and feared damage to his violins and music. So he turned to Borinquen Appliances Co., Inc., Frigidaire distributorship here, for assistance.

He inquired about a dehumidifier, but the sales representative of the company convinced him that the job could be done better with an air conditioning unit.

Now the air conditioner, controlled by a Minneapolis-Honeywell type T44B thermostat, maintains a temperature of 75° F. with 60% r.h. plus or minus 5%.

Air Conditioned Greenhouses

Ideal Conditions with Controlled Air, Light Produce Continuous Growing Cycle In California Research Laboratory

DETROIT — Faster and better plant growth through proper application of air conditioning and lighting offers nurserymen the promise of an "enormous" increase in production in existing greenhouses, the American Society of Refrigerating Engineers was informed by Art Hess at its 38th spring meeting here.

Even now successful experiments in growing strawberries under controlled air and light conditions have led to design of a conveyor system on which strawberries would be "automatically grown with complete freedom from the seasons, weather, and cultivation at a maximum rate of growth and fruiting," Hess said.

His discussion was a "progress report" on the Earhart plant research laboratory at the California Institute of Technology known as the "Phytotron" and brought out interesting points on air distribution, control of greenhouse shading with water, use of electrostatic precipitators, and the problem of filtering smog out of the air.

"One of the major problems in the design was the air supply to the greenhouse," Hess commented. "This was due to the high air change (in most cases 180 changes per hour) required to carry off the radiant energy from the sun and still enable the operators to maintain high relative humidities.

"The problem was complicated by the fact that no overhead air distribution or secondary humidifiers could be used because such a system or equipment would cast shadows. After much study and experiment it was decided to introduce the air through a slotted floor.

Draftless Air Distribution Necessary

"This," Hess said, "has worked out very successfully, giving a very even and draftless distribution of the air with changes as high as one every 18 seconds. The researchers were thus enabled to maintain humidities as high as 93% in houses with maximum sun load on the glass roof."

Two problems were encountered, however, he indicated. This type of air distribution "limited the type of clothing that women research workers could wear." Also, better air distribution could be obtained if a plenum 24 in. deep were employed with a pressure dissipating supply inlet instead of the existing 12-in. plenum.

"It was found that ⅛-in. to ¼-in. wide slots using an air velocity through the slots of 2,000 f.p.m. worked best giving such a good distribution at 18 in. above the floor that the mass movement of air upward was practically uniform," Hess said.

This method, he added, is being used "with notable success" in several commercial greenhouses.

Another problem in greenhouses is that of shading the sunlight. Radiant heat and infra-red light are useless to plants and may actually harm the growth, but light is necessary for photosynthesis.

Water Film Controls Radiant Heat from Sun

In this research greenhouse a water film was sprayed on the glass, intercepting about 44% of the radiant heat from the sun. This arrangement served a double purpose, for the condenser water was used as the roof spray.

"The radiation barrier worked perfectly, but there was difficulty in the condensing water system," Hess reported.

When this installation was compared with previous installations, "the answer to the trouble became apparent. On the previous installations, the entire roof was in glass while on the Earhart laboratory only about 50% was in glass.

"The balance of the roof area was over dark rooms and artificial light rooms. Consequently, although the whole building air conditioning load was imposed on the condenser water system, the evaporating area of the water surface was only 50% of the roof area. With the volume of water required for condensing, the water film was too thick or of insufficient area to get sufficient cooling.

"Engineering data is lacking on this, but it looks as though a good rule to follow (at least for the present) is to use a supplementary condenser water-cooling system when the entire roof of the conditioned space is not covered with the flowing water film," Hess suggests.

Air Cleaning Important

Air cleaning is another important aspect of greenhouse air conditioning, especially in an experimental laboratory where pollens, mold spores, dust, bacteria, and some chemically active gases could destroy whole experiments, he indicated.

"To accomplish important air cleaning an electrical precipitator was used and it was found necessary to supplement this precipitator to get the desired air cleaning. The precipitator failed to remove plant irritants from the air pollutants (or smog) in the air stream since these irritant pollutants are gases," Hess said.

It was also found that "small, relatively heavy bugs with hard backs and short legs, like lady bugs, could crawl through the electrical filter without being electrocuted, probably because the hard backs provided sufficient insulation for protection from the electrical potential set up by the precipitator."

Filter Intercepts Insects

While most bugs were killed in the fan, some got through into the greenhouse, he said. The answer is some form of strainer type after-filter.

Something was needed, too, to remove gaseous pollutants in the air, which were damaging plants. This factor, combined with the fact that "our Los Angeles area has a sufficient bad air pollution condition that the people have been willing to spend tax money in an investigation of the problem" led to a special study at the laboratory, Hess explained.

"First experiments indicated that while the electrical precipitator removed practically all of the visible elements of smog, the irritants were not affected and in cases were even increased.

"After many repetitious experiments, this fact led to the conclusion that the irritants were gaseous in character and possibly affected in some way by the ozone created in the filter.

"Further experiments with water spray chambers indicated that most of the irritants passed through the spray chambers and were therefore not sulphur compounds, which are readily soluble.

Activated Charcoal Filters Absorb Harmful Gases

"Concurrent work with activated charcoal filters indicated that most of these gases would be absorbed by the activated charcoal if sufficient quantities and exposed surface were used. Actually," said Hess, "good results were obtained only when three conventional air-conditioning type activated charcoal filters were installed in series handling the air quantity recommended for one unit."

Efforts to produce synthetic smog were successful and it is now known that the irritant constituents in smog are composed of large partially oxidized hydrocarbon molecules which have been combined with ozone in the atmosphere by means of energy from the sun.

"The old family car in the backyard is the worst offender," Hess commented.

A cheap filter to take out the irritant elements in smog is now being developed at the plant laboratory, he indicated. It consists essentially of peat moss with a neutral loose bulk material infiltrated with oxides of iron and manganese.

Strawberry Growing Experiment

As for that strawberry production line, Hess said that "the laboratory has found that strawberry plants will grow 24 hours per day if continuously supplied with solar energy or its equivalent in artificial light. This growth reaches maximum efficiency when ideal day air conditions are maintained for 12 hours followed by ideal night air conditions for 12 hours.

Widespread commercial application of this process "might result in some decrease in refrigeration needed for freezing but would mean a tremendous increase in refrigeration for the air conditioning that is required," he predicted.

The conveyor project under design "consists of an air conditioned tunnel with artificial light in sufficient quantities and a conveyor belt into which the plants fit and grow.

"Belt and plants will move through the tunnel, dipping down and immersing the roots into nutrient solutions or spray chambers at proper times in predetermined cycles, thus producing a continuous growing cycle."

Local Service Firms May Handle Maintenance for Armed Forces Equipment

WASHINGTON, D. C.—The Munitions Board has announced a plan to use commercial facilities for depot-type maintenance of Army, Navy, and Air Force equipment.

Current equipment maintenance needs are being surveyed, and the Armed Services will make plans with commercial firms to handle the maintenance work to absorb peak maintenance loads, to keep abreast of schedules, and to prevent backlogs.

One purpose is to minimize additional military shop construction and investment in tools and equipment. Military repair facilities will be reserved, when possible, for work that cannot be readily done commercially.

The new policy, according to the Munitions Board, is expected to assist small business and to broaden the industrial base of military supply.

Service Shows Beginning June 25 Tell Businessmen Of Defense Dept. Needs

WASHINGTON, D. C.—An all-service show for the benefit of subcontractors in the south, southwest, midwest, and Rocky Mountain areas will be staged in Will Rogers Memorial Coliseum in Fort Worth from June 25 to 30, the Department of Defense announced recently.

The show, which is intended to acquaint businessmen with the needs of the armed forces, is being put on by the Army, Navy, Air Force, and Armed Forces Regional Council.

Similar shows will be held in Minneapolis from June 25 to 27, St. Louis from July 9 to 14, Cleveland during the week of July 23 or 30, and in Detroit, Los Angles, Atlanta, and Pittsburgh on as yet unspecified dates.

OPS Field, District Offices To Be Closed on Saturdays

WASHINGTON, D. C.—Michael V. DiSalle, director of price stabilization, has issued instructions to all Office of Price Stabilization regional and district field offices for Saturday closing to the public.

"We have reached the point in our organizational program and in our public information effort," DiSalle said, "where the volume of Saturday business does not justify the added expense of keeping field offices open."

NEW PRODUCTS?

Turn to "What's New" Page for useful information on new products. Use Key No. for fastest service.

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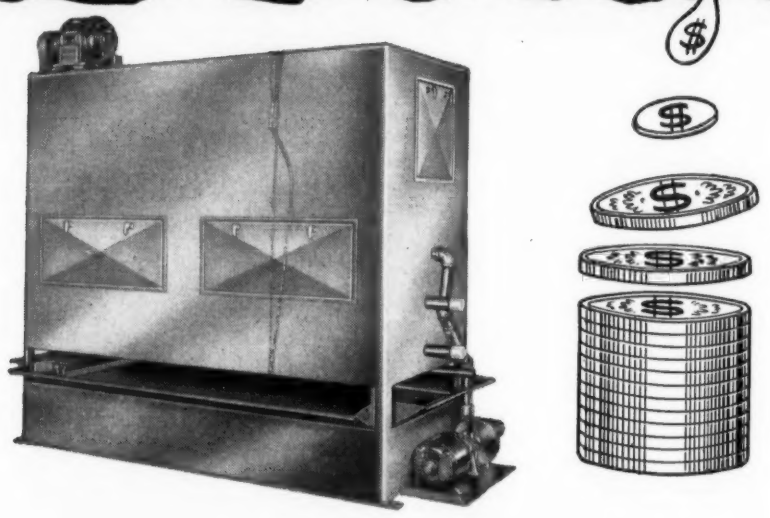

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Home Freezers vs. Locker Plants

South Dakota Dept. of Agriculture Reports on Study Comparing Costs and Results of Both Methods of Preserving Foods

BROOKINGS, S. D.—Home freezers offer several advantages over commercial locker plants for food storage, according to a study conducted by state agricultural experiment station workers here.

However, where a large quantity of meat is to be processed, the investigators decided it would be "advisable" to use the experience and facilities of the commercial locker operator and employ the home freezer as a storage unit.

Highlights of this study, which was under way for two years, are reported in the South Dakota station's 63rd annual report. Object was to determine the cost of owning and operating a home freezer as compared with using commercial locker plant services.

Three types of home freezers and a commercial plant were used in making comparisons. Major items compared were operating costs, effects of size and construction, rate and capacity of freezing, and effect of wrapping materials.

FACTORS TO CONSIDER

Among factors which "must" be considered as entering into the cost of owning a home freezer, five in particular were listed, as follows: Initial cost of installation; cost of operation; depreciation; individual cost of transportation to and from the commercial locker plant; and value received from the convenience afforded by owning a home freezer, this being considered as an individual item, to be decided separately for each case.

Other problems may be encountered that are beyond the individual owner's control, the report also points out. Cited as examples were power failure and mechanical breakdowns, which might result in thawing and possible spoilage of foods.

In making a comparison of operations local power rates, locker rental, and processing charges and other pertinent data were used in computing the cost per year for handling a hypothetical 200 lbs. of meat and 50 pints of fruits and vegetables.

Total cost per year arrived at: Locker plant—$26.25; home freezer—$18.65.

OPERATIONAL SAVING

Thus, an annual saving of $7.60 was shown where only operational costs were figured in the total home freezer costs. This, the report continues, is not sufficient to cover depreciation of the unit, or cost of paper and supplies, necessary for home processing; nor does it allow for any insurance in case of spoilage or loss of meat or other food products.

"This latter factor," the report adds, "is of great importance where inexperienced persons are doing the processing."

"Quick freeze or sharp freeze is one of the primary concerns in the freezer locker business," the report goes on. "Without this process, freezing would spoil more food than it would preserve. Therefore it is important that owners be familiar with the powers and limitations of their home freezer units."

FREEZING RATES STUDIED

Freezing rates of the different units utilized in the study were then compared, with this result: "All home units studied had a faster freezing rate than the commercial locker one unit freezing nearly half again as fast."

Type of wrapping paper, as well as type of freezer, affected the freezing rate, it was found. All meat cuts wrapped by the "No-Air" method froze in less time than cuts wrapped in paper and the latter showed only slight variations in rate of freezing.

In a comparison of losses in weight it was revealed that meats frozen and stored in the commercial locker plant had smaller losses in weight than any meat frozen or stored in home units. In this connection the report observes:

"When wrapping materials were considered separately, the wax, locker-paper-wrapped meats had an extremely large loss in weight during freezing and storage. As a result of these losses, the meat was of much poorer quality after freezing and storage than it was originally.

"Much dehydration had taken place, but this may have been due to the fact that only one thickness of paper was used in wrapping. It is suggested that all meat cuts be wrapped with two thicknesses of paper, if this type of wrapping is to be used."

The study yielded only limited information on rate and capacity of freezing, but it was recalled that other investigators have suggested an optimum load of 3 to 4 lbs. of meat or other products for each cubic foot of freezing capacity, during any one 24-hour period. This, it is stated, was substantiated in the South Dakota study by the increased length of time required for freezing when freezers were loaded beyond this amount.

"It would be advisable to use the experience and facilities of the commercial locker operator in the instances where a large quantity of meat is to be processed," the report says. "The home freezer could then serve as a storage unit for the food products.

"This system of operation would enhance the efficiency of the home freezer by permitting the owner to take advantage of the lower processing costs of the commercial operator as compared to home processing, and also enhance the quality of his meals by having a greater assortment of fresh foods at home."

Credit for preparation of the report is given to Prof. Ellis A. Pierce of the experiment station's animal husbandry department, and H. H. DeLong of agricultural engineering.

Kroger Opens Air Cooled Store

MACON, Ga.—A new air conditioned Kroger "food department store" has opened at 680 Second St.

Thor Campaign Proves Value of Promotions Now, Hurley Declares

CHICAGO—The merchant who will revive old-fashioned aggressiveness will have no trouble selling his wares or eliminating his excess inventories in today's credit-restricted buyer's market.

So declared John R. Hurley, president of Thor Corp., who reported that distributors' unit sales of Thor wringer washers in the week ended June 8—first week of its "Bushel and a Peck" sales campaign—showed a 170% gain over the same week last year.

The sales campaign, which opened June 3 and runs until mid-July, features the giveaway of a bushel of groceries and a peck of potatoes to each purchaser of a Thor wringer machine.

Hurley said that while the figures applied to distributor sales to dealers, "they prove that our dealers are securing greater movement at retail level than they've seen in months."

'Ice Block Derby' Builds Traffic

SCRANTON, Pa.—The Mohican Market here staged a traffic-building promotion on frozen foods which featured a guessing game in connection with the melting of ice.

Each day during the store's promotion of frozen foods, it had a package ot the food frozen into a cake of ice. Visitors were invited to guess the time when the ice would melt and the package of frozen food drop to the bottom.

The customer guessing the nearest to the exact time received 25 packages of frozen foods free. Name of each day's winner and time of the melting was carried in daily newspaper advertisements which built up the event as the "Ice Block Derby."

Appliance Warehouse Planned

HARRISBURG, Pa.—The D. & H. Distributing Co. plans a $150,000 warehouse at 2535 N. Seventh St. for storing electrical appliances. The structure will measure 238 by 358 ft.

Tyler moves ahead with 3 great names!

TYLER FIXTURE CORPORATION
ORIGINATORS OF WELDED-STEEL COMMERCIAL REFRIGERATORS

HARDER REFRIGERATOR CORP.
SINCE 1856 — MANUFACTURERS OF QUALITY REFRIGERATORS

WILSON REFRIGERATION, INC.
PIONEER MILK COOLER AND HOME FREEZER MANUFACTURERS

Tyler has purchased the operating business of Wilson Refrigeration, Inc., of Smyrna, Delaware, which will be operated as a division of the Tyler Fixture Corporation.

Thus, the name WILSON—famous since 1927 as a leading manufacturer of milk coolers, freezers and commercial refrigerators—is added to HARDER—pioneer in home and farm freezers, and TYLER—famous for *welded-steel* refrigerator display cases and commercial refrigerators.

The Tyler commercial refrigerator line—the most complete in the world—will continue to grow! The enlarged Tyler organization possesses an enviable record of service with a combined total of over 140 years experience, and with a combined total of over 16 acres of plant, office and warehouse space. Tyler will continue to develop new and better refrigeration equipment for food stores and eating places of all kinds, for the farm and for the home.

TYLER
FOR FOOD REFRIGERATION

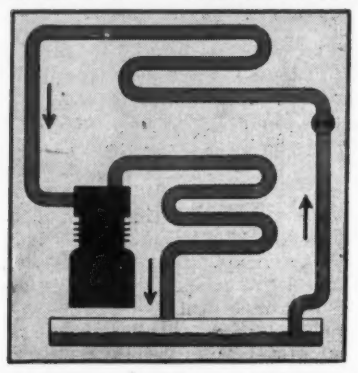
NILES, MICHIGAN
Tyler Fixture Corporation
Main office and plant

COBLESKILL, NEW YORK
Harder Refrigerator Corp.
Division of Tyler Fixture Corp.

SMYRNA, DELAWARE
Wilson Refrigeration, Inc.
Division of Tyler Fixture Corp.

WAXAHACHIE, TEXAS
Tyler Fixture Corporation
Branch plant

GETS TO THE TRAPPED MOISTURE



Thawzone circulates with the refrigerant to reach ALL the moisture. Gets to any moisture traps in expansion valve, receiver, etc.

By a patented method Thawzone actually destroys moisture so it can't come back. For any "Freon" or methyl chloride units. Phone your wholesaler now.

THAWZONE®

AIRO stands for

Fast, dependable, world-wide service.

Refrigeration and Air Conditioning parts and supplies.

Write for current Catalog

AIRO SUPPLY CO.
2732 N. Ashland Ave., Chicago 14, Ill.

JUST ASK US!
Turn to "What's New" page for useful information.

New Gibson Models--

(Concluded from Page 1, Column 4)

fast freezing of foods.

The new Gibson home freezer model being introduced is a 13-cu. ft. model (designated as HF 1391) with a suggested retail list price of $439.95. A principal feature of this new model is a large separate freezing compartment.

Other features of the freezer include an automatic interior light, two handy storage baskets, easily accessible control which cannot be completely turned off; as well as snap-seal self-closing latch hardware with lock.

The two-door refrigerator models offer such standard Gibson interior features as two "Swing'r Crisp'rs" with floating clear-plastic covers; three handy door racks and a butter compartment; and the new "Spill Saver" tray for small packages and jars.

The deluxe model has adjustable shelves for flexible shelf arrangement and two "Spill Saver" trays. Gibson's "Pres-Toe" foot-operated door opener opens and closes the larger food compartment door.

Another feature of the deluxe model are special shelves for the ice cube trays. It will make 52 cubes per freezing, as compared with 40 cubes for model 1021.

The low temperature compartment in both models measures 10 in. high, 22¾ in. wide, and 16⅛ in. deep. Both models use a ¼-hp. hermetically sealed compressor.

Separate controls for each compartment permit fast freezing in the freezer compartment without lowering temperatures in the food compartment, and defrosting the food storage compartment without raising the temperature in the freezer compartment, according to the manufacturer.

CPR Rule 4--

(Concluded from Page 1, Column 5)

the chart in that category or category average, whichever was lower.

This, the Office of Price Stabilization came to recognize, "caused substantial squeezes solely upon the basis of such factors as the gap in the retailer's price chart and variations in percentage markups."

Now Rule 4 has been amended to allow the retailer to average the percentage markups of the next higher and the next lower cost lines for the purpose of determining the markup to be applied to an invoice cost which falls between two cost items.

This amendment took effect on June 18, the OPS pointed out, but "in order to permit orderly repricing of merchandise affected by this change, retailers will be permitted to continue under the former Rule 4 until July 31."

Here is how pricing will be done under the new amendment:

Say you want to price a console radio on which you have a net cost of $140. You have no net cost of $140 on your pricing chart in category 875. The next lowest net cost on your chart in that category is $130 with a permitted percentage markup of 35%. The next higher net cost is $150 with a permitted percentage markup of 40%.

To find the percentage markup for the $140 net cost, you add the percentage markup on the next lower net cost—35%—to the percentage markup on the next higher net cost—40%—to get 75. You divide 75 by 2 and get 37.5%. That is your permitted percentage markup. You take 37.5% of $140 ($52.50) and add it to the $140 net cost to get your ceiling price of $192.50 for the radio set.

Under the original rule, the best you could get would be a 35% markup or a ceiling price of $189.

DO-75 Rating--

(Concluded from Page 1, Column 4)

remote air conditioning unit coolers
ceiling and wall mounted refrigeration unit coolers
floor mounted refrigeration unit coolers of the dry and spray types
absorption and adsorption systems
packaged, self-contained air conditioners except room units
refrigerant compressor bodies
self-contained, packaged ice making machines
brine or water centrifugal refrigeration systems

Order M-61 permits use of the DO-75 rating to get 10% more iron and steel products, 5% more copper products, and the same amount of aluminum products as the producers of the above mentioned equipment got in the first quarter of this year.

A similar order, M-60, gives a DO-70 priority rating for the same purpose to manufacturers of certain types of valves, and unions, as well as fittings.

However, makers of refrigerant regulating valves are not included in this group.

I-H Awarded Contract For 151 Refrigerators

DALLAS—The International Harvester district office here has been awarded a contract for 151 refrigerators by the Housing Authority of the City of Wichita Falls, Tex., it was announced recently by W. E. Turner, district refrigeration sales manager.

The contract calls for furnishing a Wichita Falls apartment housing project with the company's model HA-74.

How Much Steel for Civilian Use? Views Vary Very Widely

CHICAGO—The "Great Debate" in industry circles today is—just how much critical materials will the Defense Program take—and how much will be left for "non-essential" consumer durable goods producers?

One highly placed steel industry official said last week that as much as 85% of finished steel production in the third quarter would be assigned to direct defense and defense-supporting industries, with most of the steel going to the latter.

George F. Castner, president of the American Home Laundry Manufacturers' Association, urged members of his group to seek aggressively war contracts for 50% of their plant capacity, stating that:

"Washington limits our use of steel to 70% of that used in a base period, but various government offices have so loaded the mills with preferential orders for export to foreign countries and for so-called defense supporting industries that the capacity of these mills is being taken up to 75% and beyond."

On the other side of the picture, a steel industry man, said that "consumers are continuing to overestimate their need for steel. After the military gets its steel, consumer industries will still have enough to produce nearly to their level of 1950, which was a banner year."

Rheem Names Horne--

(Concluded from Page 1, Column 3)

tion of the refrigerators, has been active in the American Gas Association and the Southern Gas Association for several years. He is a past president of the latter group.

At present, he is a member of the AGA executive committee, chairman of the residential section, member of the general promotion and planning committee, and of the national advertising committee.

Rheem also announced the appointment of Ralph W. Cooke, central regional sales manager in Chicago, as sales manager, appliance division.

Cooke replaces C. T. Miller, who has been named assistant general sales manager. William S. Goodfellow, assistant western regional sales manager, succeeds Cooke.

King Freezer--

(Concluded from Page 1, Column 2)

days, and on the other models in 60 to 90 days, King said.

Refrigeration for the freezers will be furnished by a wrap-around tubing evaporator, sealed to the liner. Cabinets will be insulated with 3½ in. of Fiberglas on the bottom and 3 in. on all sides.

It is planned to offer handy storage baskets and an interior light as optional features.

Price 'Rollback' Rumors Hurt Appliance Sales

CHICAGO — Widespread publicity given to the idea that there might be a price rollback, plus the credit restrictions imposed by Regulation W, account for the failure of refrigerators to continue their sales rise in recent weeks, declared Dan Packard, Kelvinator household sales manager, in a panel discussion at the American Furniture Mart here.

Packard also pointed out that the two "scare buying" waves in 1950, brought about by the Korean situation, had served to "borrow" many sales from 1951.

Pointing out that in his opinion there will be no lowering of prices by manufacturers because higher costs are facing manufacturers, Packard said that when the public is convinced that there won't be any price breaks, they can again be put in a buying mood.

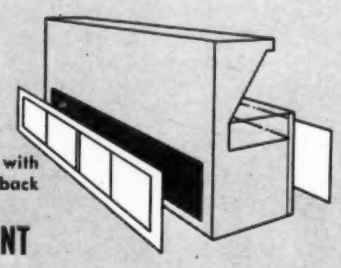
Packard's remarks were echoed in a statement made independently by William A. Blees, Crosley vice president, who said that "government publicity that prices are to be rolled back has had great influence on our business." Blees said that while manufacturers' inventories of appliances are increasing he is not at all worried because "nothing has happened to affect the public's ability to buy."

"This is It!" THE SHERER CONVERTIBLE OPEN DISPLAY CASE with sliding mirrors

Here's an open display case that you can sell because you can make it fit your customer's individual needs exactly. With the *NEW* Sherer Model UL2710-C YOU CAN:

1 add or subtract whatever you need to fit the requirements of your customer's store
2 create 12 different body styles
3 change it on your floor — before you deliver it
4 or you can change it, at any time in the future — right in the user's store.

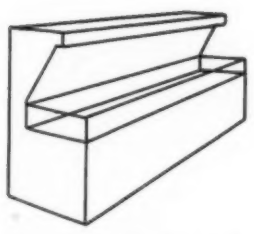
MODEL UL2710-C



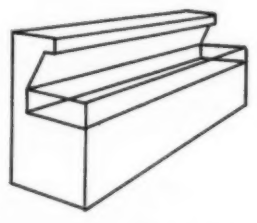
Solid front with slide door back

4 CHOICES OF STORAGE BASE ARRANGEMENT

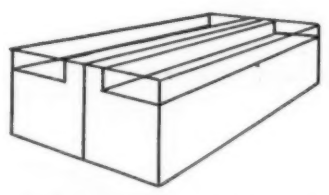
3 STYLES OF SUPERSTRUCTURE



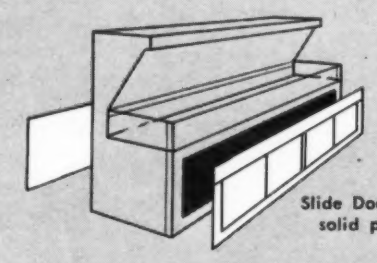
High canopy with *Sliding Mirrors* that multiply the appeal of the merchandise on display—and makes servicing possible from the rear as well as the front



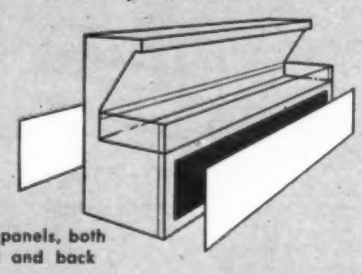
Low canopy with fixed mirrors



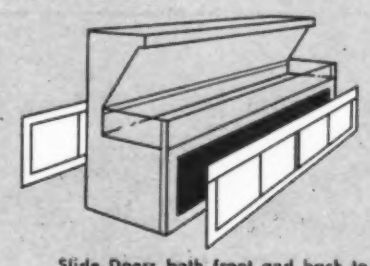
Stainless Steel Cap for low cases. Where required, can be used back to back for Island display set-up



Slide Door front with solid panel back



Solid panels, both front and back



Slide Doors both front and back to make it a "pass through" Case

SHERER OFFERS FREE STORE ENGINEERING AND PLANNING SERVICE. Write for details. Also write for details on Sherer's New Finance Plan.

SHERER-GILLETT COMPANY
Dept. AC
MARSHALL, MICHIGAN

SHERER

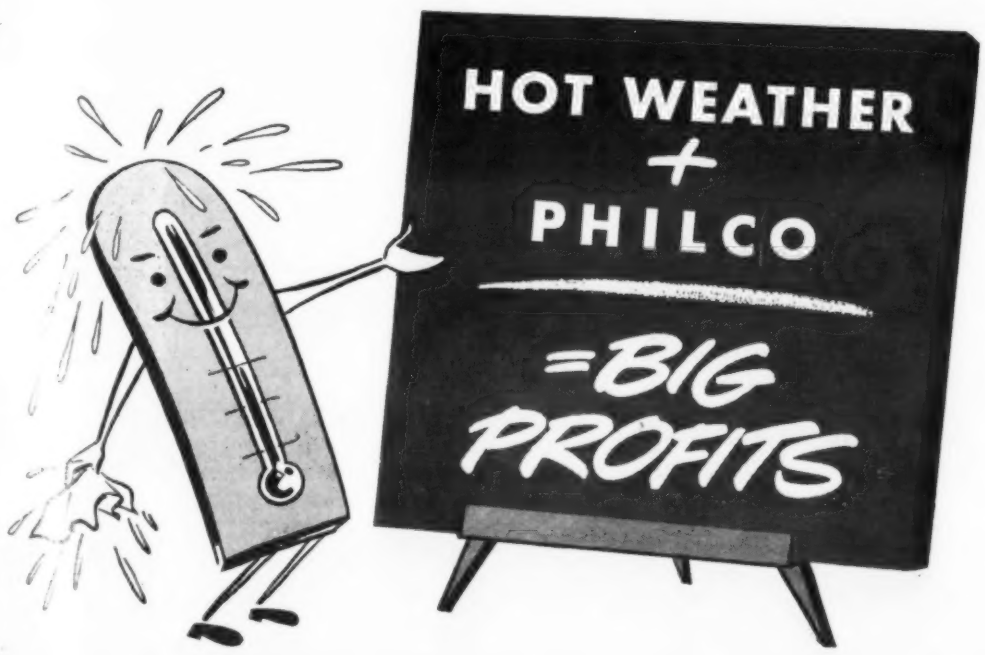
If you want to put the advantages of these new Sherer developments to work for you
WRITE FOR FRANCHISE INFORMATION
Name.....
Address.....
City.....State.....

PHILCO...Quality Leader in Room Air Conditioners

YES, it's been true for fourteen straight years . . . it's even more emphatic for 1951 . . . the *first choice* for quality, value and dependability in a Room Air Conditioner is a Philco. Year after year it has outsold all others combined. It is the overwhelming leader on every count!

And right now, Mr. Dealer, is your greatest opportunity to cash in on Philco's unequalled record of leadership. The height of the air conditioner selling season is at hand . . . public demand is *skyrocketing.* And plenty more hot weather still to come!

Make sure you are taking *full advantage* of this opportunity . . . that you are getting the "leader's share" of the air conditioner business in your area. Philco's line, Philco's advanced features, Philco's record of quality and lasting satisfaction are your best assurance of increased sales and profits. Make 1951 your *banner year* in this great and growing industry . . . with Philco, the leader in QUALITY . . . the leader in SALES!



Cash in Now

on the overwhelming public acceptance of Philco, the leader

All over America, new prospects are "waking up" to the comfort and convenience that a Philco Air Conditioner can bring to any room in the home, to a hotel or hospital room, to office, store or tourist court. They are ready to buy . . . if you contact them when the weather is HOT. And remember, every new Philco model has a Sealed Power System . . . it's *packaged merchandise* . . . as easy to sell, install and service as an electric refrigerator! Don't delay . . . sell, promote Philco now.

Turn The Dog Days Of Summer Into Months Of Big Profits

INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)

"I'm guilty as charged, Your Honor. But I did it in self-defense."

"That's no defense. Not in this court. She might have falled upon, maimed, or killed an innocent pedestrian below."

Nice to Everyone

Warren G. Harding was one of the nicest and sweetest and most cooperative fellows who ever held high public office. Yet, the short time he was President was a sad and sorry time—both for him and for the nation.

Why?

An old friend of the Harding family in Marion, Ohio, once told the writer that Warren's father predicted that he would come to a "bad end" because he was too good a fellow. According to this octogenarian, Harding's father warned him:

"Son, it's a good thing you aren't a girl. Otherwise you'd be pregnant regularly on account you can't make yourself say 'No' to nobody."

How To Win a Bet

"Bet you ten bucks you can't make the President laugh," wagered a friend who was escorting Will Rogers to a meeting with Calvin Coolidge.

"Make it a hundred and you've got a deal."

They shook hands on it.

Inside the White House, the taciturn Coolidge was geeting a long line of invitees to his reception. Came Will Roger's turn.

"Mr. President," introduced the go-between, "Will Rogers."

There was a flicker of interest in Coolidge's bland eyes, but no humorous response.

Rogers turned to the go-between, and cupped his ear.

"Beg pardon?" he drawled. "Didn't catch the name."

Coolidge chuckled, and Will collected.

Coolidge Again

As their most distinguished alumnus, Calvin Coolidge was implored to attend a reunion of his class at Amherst. The President replied that pressure of duties prevented. Next the class secretary begged him to send a message of greetings which could be read at the banquet.

At the last moment Coolidge complied, and a messenger arrived at the speakers' table with an envelope bearing the White House imprint.

"Gentlemen," announced the proud class secretary, slitting open the envelope, "we are honored with a missive from a great graduate of our grand college, The President of the United States!"

Cheers and stamping of feet interrupted this announcement, along with impromptu harmonizing on "Lord Jeffrey Amherst." When some semblance of order was restored the crestfallen secretary read the message:

"Greetings. Coolidge."

Congressman Doe from Massachusetts complained to Coolidge that a colleague had been insulting him.

"What does he say?"

"Mr. President, he tells me to go to Hell."

"Let me think this over."

Two days later the Congressman received a short note on White House stationery.

"I have studied the laws of our land," Coolidge wrote, "and you don't have to go."

Lincoln Yarns

Along with General McClellan (who politicked so hard he neglected to lead the Union armies into battle), Secretary of State Stanton had the Presidential "bug" and schemed to secure the Republican Party nomination. Lincoln was apprised of Stanton's maneuvers to succeed him.

"Be not disturbed," Lincoln advised his informers. "Good deeds may come of this ambition. I mind when I was a boy helping my father plow a small farm. Our horse was old and slow. To our surprise he dashed across the field on the third furrow. Running as fast as I could I caught up and stopped him before he hit the fence. Grasping his bridle I saw that horseflies were biting his lips and I whacked 'em off.

" 'Whut did ye do that fer, Abe?' my father admonished. 'Them hossflies made him kick up his heels and run.'

"If Stanton is bit by the Presidential 'bug' he'll do his job better because he'll run faster. Leave him alone."

Eight months after he assumed the presidency Lincoln was bedded down with smallpox.

"Now I can see all the politicians and office-seekers who've waited so long in the ante-rooms," he humored. "At last I have something to give them."

More Lincoln

"Do we have any idea," queried Secretary Stanton in a cabinet meeting, "of the size of the Confederate armies?"

"If what our generals tell me is reliable," estimated the President, "Lee commands more than a million and a half men. Every Union general insists that he is outnumbered four-to-one. Our roster totals up to 400,000, so the Confederates must have 1,600,000," Lincoln tongue-in cheeked.

Sons Tad and Bob were wailing as Lincoln tugged them along a street in Springfield, Illinois.

"What's the trouble with your boys, Abe?" sallied a passer-by.

"Same thing that's the trouble with the world. I found three walnuts, and each of the lads wants two for himself."

That Lincoln was a truly religious man is undebatable. That he didn't always sympathize with formal creeds and sanctimonious stuffiness, however, is also a matter of record.

Galled by a delegation of churchmen who insisted that their political recommendation was "God's will," he devastated them with the following possibly irreverent anecdote.

"Senator So-and-So from Alabama told me this the other day. Seems there was a balloon ascension in Birmingham, and the balloonist travelled a long way. Finally came down in a cotton field. Most of the slaves ran away in terror. But Uncle Mose, he stood his ground, and humbly greeted the balloonist.

" 'How-do, Jesus suh. How's yo' Pa up deah in de sky?'

"When was it you men heard from the Gentleman up there in the sky last?"

Trouble with being a celebrity is that human (or are they?) satellites swarm around Men in the Public Eye, and bore them unmercifully.

President Lincoln got rid of a tiresome "little shot" from Sangamon county, Illinois, by twitting him about his baldness—a sensitive spot. Having listened overlong, Abe rummaged around in a bottom drawer of his desk and brought up a bottle of hair tonic.

"My friend," Lincoln advised, "this stuff has been warranted by its manufacturer to grow hair on a billiard ball. I perceive that you could make use of it. Take it home, with my compliments. After you have applied it for a year, come back and tell me how it worked."

Lincoln never saw him again.

From the unrecorded meeting of Lincoln and Douglas at Marshall, Illinois, one anecdote survives. Douglas, so the unquenchable legend goes, had bewitched Clark county folk with his oratory. No one in the audience allowed as how ungainly, homely, awkward Abe could match the Douglas eloquence and elegance.

He didn't try.

"Good folk of Marshall and Clark county," he is supposed to have said, "I'm minded of a steamboat I used to see on the Sangamon river. Its boiler wasn't big enough to keep its whistle and its engine going at the same time. Every time the captain blew the whistle his boat stopped.

"Senator Douglas is like that boat. When he blows his whistle he can't think."

Money Troubles

Nearly all Congressmen receive less money than they need—to live on, to get reelected, and to "keep up appearances." This sad state of affairs has obtained for at least 150 years.

It's a well-documented fact that the fiery and oracular Henry Clay sought a $200 loan from the Riggs bank in Washington, D. C. To comply with this bank's rules he asked Daniel Webster to co-sign his note.

"Need some cash myself," Webster countered. "Make out the note for $500, give me half, and it's a deal."

The Riggs bank felt honor-bound to lend the five hundred, and still treasures that pledge co-signed by two of the most illustrous Congressmen in America's proudly-hailed history.

Footnote: Neither Clay nor Webster paid this debt, nor could it be recovered from their meagre estates.

Lagniappe

Ben Lucien Burman, author of "Everywhere I Roam," is an authority on Kentucky mountaineers. He knew one politico whose campaign pledge was, "A Dog for Every Man in My District."

And he found a lawyer who had secured acquittal for a client—charged with fishing out-of-season—by pleading self-defense.

According to Burman, this lawyer never lost a case until he lost his regular witnesses. One died and the other joined the Navy.

Another Marshall Story

"Would you call the preceding witness a truthful man?" questioned Atty. Grendel Bennett of Marshall, Illinois.

(Counsel for the defense had dozed off, and so didn't jump to his feet and object).

"Wouldn't go so fur as to call Zeb a liar," drawled the witness on the stand. "Howsomever, I know he has to get someone else to call his hogs come feedin' time."

Back home in Marshall a Mrs Nussbaum died and willed a small sum to three cats who had been household pets for a number of years. Her kinfolk, needless to say, were scandalized at this turn of events and immediately contested the will on the grounds that the old lady hadn't been of sound mind.

At the trial a witness was questioned by the plaintiffs' attorney.

"Did you," probed the lawyer, "at any time hear the deceased talking to herself when she was alone?"

"No, sir."

"Are you positive?" persisted the attorney.

"Yeah. I wasn't never with her when she was alone."

Debit or Credit

'Tis rumored that a California Congressional candidate sought Herbert Hoover's help in a campaign.

"Why, sure," twinkled the former President. "Be glad to help. Do you want me to speak for you or against you?"

Wide Open Spaces

The roll was called by states at a national convention, and the head of each delegation responded with a short speech. Came the turn of Texas. Its speaker held forth mellifluently, and perorated:

"The great State of Texas is proud of many things. The first white woman born in Texas is still living . . . . She now has a population of more than three million, and . . . ."

Interrupted a delegate with a strident voice:

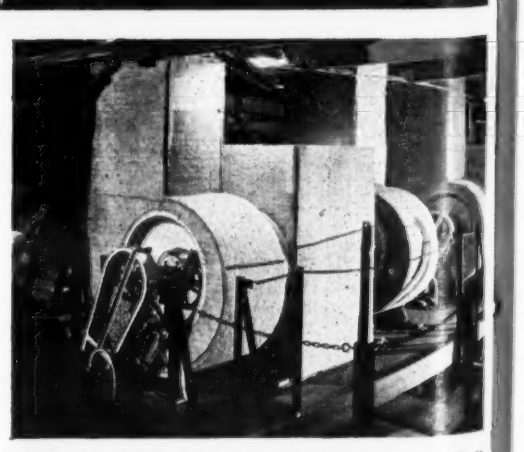
"Send that woman out to Wyoming. We need her!"

Ultramodern

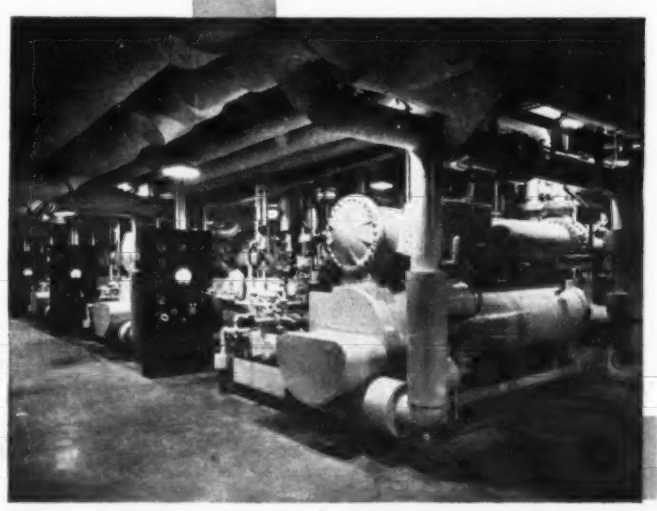
has air conditioning systems supplying

THE NEW UPJOHN PHARMACEUTICAL PLANT *is an architectural masterpiece of modern design and construction, air conditioned throughout. It dominates a 1500-acre site near Kalamazoo, Michigan.*

Photographs: Courtesy of The Austin Company



BLOWER FANS ARE INSTALLED *above "troffer" beams of integrated ceiling and may readily be serviced whenever necessary. Note insulation covering fans and ducts.*



THREE CARRIER CENTRIFUGAL COMPRESSORS *in basement engine room of the plant. Installation reflects hospital-like cleanliness essential throughout the building.*

CROSS-SECTION OF THE PLANT *in four divisions gives better idea of large area that must be completely supplied with specially conditioned air. On left is finished-goods warehouse. In center: packing and manufacturing areas. At right: raw-stock warehouse.*

HARRY ALTER'S
SPRING-AND-SUMMER 1951
DEPENDABOOK No. 154
Over 9,000 Refrigeration PARTS and Supplies
To successfully conduct a business in these days of scarcities, you really need DEPENDABOOK No. 154 . . . If it's available you'll find it listed in this latest edition.

Write for your copy — on your letterhead

"Service doesn't falter when it comes from Harry Alter"
The HARRY ALTER Co. WHOLESALE ONLY
1728 South Michigan Avenue, Chicago 16, Ill.
134 LaFayette Street, New York 13, N.Y.

SMI Members Plan More Stores, Remodeling Despite Government Building Restrictions

CHICAGO — Continued expansion of supermarkets is promised for 1951, even despite governmental building restrictions.

That trend is indicated, at least, in a survey of 464 member companies of the Super Market Institute, who themselves figure on constructing 700 new "supers" during the year. And by "supers" they mean stores with a minimum annual sales volume of $300,000.

By that standard, SMI members already operate 3,257 supers in a total of 6,048 stores. Combined sales volume reached $3,606,000,000 last year.

Over half of the institute members (52%) plan to erect new supermarkets and 33% plan major remodelings it was shown in reports of a survey presented at the group's 14th annual convention in Chicago by Curt Kornblau, who manages the institute's Research and Information Service.

"Non-food departments made some gains in supermarkets during the year. They are still most prevalent in the western regions," he said.

Health and beauty aids are carried by 89% of the supermarkets; housewares by 45%; magazines, 24%; electrical appliances, 10%; records (mostly children's) 9%; hardware, 7%; flowers, 2%; dry goods, 2%; Many other departments may be found in even fewer supers—ranging from greeting cards to shoes and from toys to outboard motors.

Complete bakery departments are included in 42% of the member supermarkets. Beer may be found in 37% of the supers, and liquor in 10%; fountains or restaurants in 7% of the supermarkets, according to Kornblau.

Nearly one out of every five member supermarkets (19%) is fully self-service in all four major departments (grocery, meat, produce, and dairy). Over a third of the members (35%) operate one or more such supermarkets.

In the west south central region, every other supermarket is completely self-service (as defined above); in the mountain-Pacific area, 40% are. By contrast, only 8% of the member supers in the middle Atlantic region are completely self-service.

The trend to self-service meat continued in the past year. As of the time of the survey, 62% of the total SMI member supermarkets had self-service meat departments—41% complete and 21% partial.

Assuming that the members carry out the installations they have planned for 1951, by the end of the year 68% of all member supers will have self-service meat departments —48% will be complete and 20% partial.

"If packaging supplies should become more readily available, and if the remaining local impediments to the self-service method of retailing meat should disappear, it is not unreasonable to assume that an even larger proportion of supers will have self-service meat departments," he said.

"Partial self-service meat installations are decidedly on the wane. Last year seven out of 10 installations were completely self-service; according to 1951 plans, over eight out of 10 installations will be completely self-service.

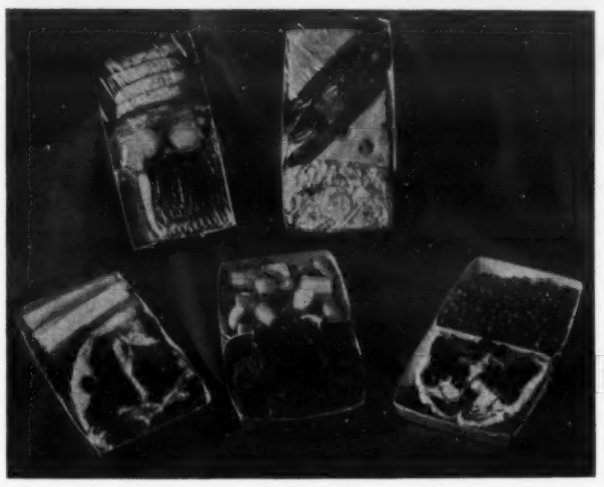
"With shortages of vital supplies, operators are concentrating on installing self-service meat in new markets rather than conversions. Last year, 60% of all self-service meat installations took place in new supers; 1951 plans call for four installations in new supers to every conversion.

"Two out of every three new supers opened in 1950 have complete self-service meat departments; 18% have partial. Despite the shortages, the 1951 crop of new supermarkets is scheduled to open with the meat department completely self-service in 64% of the supers and partial self-service in 13%.

"Nine out of every 10 SMI members do some pre-packaging of perishables in their supermarkets: Cheese is pre-packaged in 65% of all the SMI supers; cold cuts in 54%; fresh meats in 43%; and fresh fruits and vegetables in 31%.

"One out of every 10 members does some central packaging of perishables: 7% of the members for cheese; 5% for fresh fruits and vegetables; 3% for meat cold cuts. Most of these companies also pre-package in their stores.

"The companies with central prepackaging operations were generally large companies; for example, the 7% of the SMI members who prepackage cheese centrally operate 21% of all the SMI member supermarkets."



COMBINATION packages, including several items for one meal, are said to be opening new sales horizons in the self-service type of operation.

Jack Dickie Gives 6 Factors Needing Control In Self-Serve Meat Department

CORONADO, Calif. — "Saleswise, Profitwise, Your Future Is In Self-Service Meats," Jack Dickie, merchandising consultant with Tyler Fixture Corp., told food store operators attending the annual meeting of the Western States Chain Grocers Association.

"100% self service meat operations are increasing by leaps and bounds throughout the United States," according to Dickie who gave the following as substantiating reasons why pre-packaged meat merchandising will continue to grow:

1. Future intensified competition will demand an over-all markup of not to exceed 12%.

2. Tomorrow's equipment will produce miracles productionwise compared with today's.

3. Greater production per-man-hour will be obtained through production planning and layout.

According to Dickie there is great need in self service meat merchandising to specifically control the following:

1. **Procurement and Buying.** It is very necessary to obtain the right kinds of meats for each market inasmuch as each operation differs at least slightly from operations in adjacent trading areas. Often times, too, a buyer has insufficient time to study the different needs of the various operations for which he purchases, or he fails to obtain sufficient quantities of product to meet demands or increase demands.

Qualities and weights of wholesale cuts and carcasses should be standardized. Buy only what can be sold in any one week, and practice inventory control.

2. **Handling Meats on Arrival.** Provide adequate cooler facilities to permit unpacking of all items on arrival and control your operation to see that it is done. Break down all carcass meats on arrival and provide the necessary equipment to do so.

3. **Fresh Meat Production.** Engineer the meat cutting room so as to give you the greatest production per-man-hour. Plan and carry out a daily or weekly production schedule. Use production flow charts to educate your meat cutters and other personnel. Provide sufficient room to produce the necessary items to meet demand.

4. **Plan Your Package.** Plan your package to appeal to the average customer sizewise, number of pieces, and type of cuts for your specific marketing area. Make your package neat and above all distinctive. Check your package to see if it is practical from a cost production standpoint. Check your labels to see if they do an intelligent selling job, express character and quality, enhance your standing as a merchant, and appear distinctive. Engineer your packaging room so as to obtain the greatest production possible.

5. **Display.** Plan your displays with an objective. Practice merchandise placement in the same manner as is applied in grocery departments. Keep your displays adequately filled. Control the height of your displays, and maintain correct temperatures inside the product, inside the package.

6. **The Human Element.** People are your greatest asset, whether they be employes or customers. Train employes objectively. Build team spirit by the captain or meat manager of your operation and you will produce a winning self service merchandising team.

New sales horizons are opened with combination packages, Dickie said, demonstrating actual combination packages of salads and cold meats, bacon and eggs, steak and french fries, green peas and lamb cuts, stew meat and vegetables. He left the food store operators with the thought that self-service meats in pre-packaged 100% frozen state could be made as accessible to the customer as Coca-Cola and dispensed in much the same manner.

Safeway Air Conditions and Remodels Cheyenne, Wyo. Store

CHEYENNE, Wyo. — Safeway Stores has remodeled its store at 2307 Carey Ave. to provide year-round air conditioning, 36 ft. of refrigerated produce cases for the more perishable vegetables and fruits, 48 ft. of self-service meat cases to provide for pre-packaged vending of all meats, 25 ft. of open-top self-service frozen food, ice cream and dairy cases, and fluorescent lighting throughout. Walk-in coolers have been installed for meats and produce.

JUST ASK US!

Turn to "What's New" Page for useful information on new products.

Pharmaceutical Plant

over 100 different zones

The Problem —New facilities in a major expansion program of the Upjohn Co., well-known pharmaceutical manufacturers in Kalamazoo, Mich., were required to:

1. Provide the best accommodations for the manufacture of Upjohn products . . . and with a view to future requirements.

2. Insure maximum efficiency and economy consistent with the high quality of the company's products.

3. Provide facilities and conveniences that would conserve time, energy and health of employees.

One of the design "musts" was an air conditioning system which would provide varying conditions of temperature and humidity to meet unusual requirements of complicated production operations in over 100 different zones.

The Solution —An ultramodern group of buildings with a total of 33 acres under roof, carefully planned for flexibility of usage and minimum maintenance expense. Manufacturing operations and storage areas housed on one floor in a huge building 870 x 1125 feet . . . a structure designed and built by The Austin Company, Engineers and Builders.

Because of the wide range of operating conditions and the necessity for maintaining precise control in so many different departments, 120 separate air conditioning systems were required. Seventy-five of these are in the manufacturing area.

The Installation —The 120 distribution systems are all installed above acoustical ceilings on reinforced concrete platforms supported by welded H-section roof trusses.

Combined, these systems move a total of 2,810,000 cubic feet of conditioned air per minute to the different zones.

Each system is designed to supply air of scientifically specified temperature, humidity and sterility to meet and maintain exacting needs in various production departments. Requirements range from standard comfort conditions in the plant office and service areas (80°F. D.B.; 50% R.H.) to highly complex combinations in which ultraviolet germicidal lamps, chemical dehumidifiers and electrostatic precipitators have been combined with other basic equipment to meet demands for sterile and favorable manufacturing conditions. Conditioned air for the principal manufacturing areas (75°F. D.B.; 40% R.H.), is supplied at a rate of more than 1,220,000 cubic feet per minute.

Three Carrier centrifugal refrigerating compressors installed in the basement of the manufacturing building provide cooling for the chilled water system used to condition the central manufacturing areas. The installation has a cooling effect equivalent to approximately 1050 tons per hour.

Additional refrigeration equipment installed throughout the plant meets specialized requirements of the "freeze dry" department and various cold rooms, bringing the total installed refrigerating capacity to something in excess of 1175 tons. Cooling effect for some areas is accomplished with 52°F. well water. All compressor units in the plant use "Freon" safe refrigerants.

The Future —In today's expanding economy, new plants, as well as many being modernized, are ripe prospects for complete air conditioning and refrigeration systems. Precision operations and new process requirements demand plants equipped for complete control of temperature, humidity and dust. Here is an ever-growing, ready-made market . . . yours to tap.

As so frequently is the case in modern manufacturing plants and offices . . . operational safety, efficiency and economy of air conditioning and refrigerating systems are factors of prime importance. For this reason, it is surely in order to recommend equipment using "Freon" safe refrigerants . . . both for new and remodeled buildings.

"Freon" refrigerants are nonflammable, nonexplosive, virtually nontoxic. Their uniform purity assures highly satisfactory, economical and trouble-free performance in machines over long periods of time. You can always be certain that building owners will appreciate your explanation of the advantages of installing dependable, "Freon"-charged equipment. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.

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KINETIC
"FREON" SAFE REFRIGERANTS
"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon refrigerants.

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DISPLAY CASE LINE

- Every type of display case.
- For Meats, Vegetables, Fish, Delicatessen and Dairy Products.
- Self-Service and conventional cases.
- Variety of sizes and endless models for any store layout.
- Economical and Efficient.
- *Displays that Sell.*

For information write: Victor
MANUFACTURERS OF THE FAMOUS VICTOR QUICKFREEZE
PRODUCTS CORPORATION • HAGERSTOWN, MD.

'That Stumps Me' Contest Designed To Get Retailer To Read Sales Literature

NEW YORK CITY—Retail salesmen in the New York area are trying to "stump the experts" these days.

The "experts" are Times Appliance Co.'s wholesale salesmen.

The quiz game is Times' "That Stumps Me" contest, part of its expanded sales training program. Times is the franchised distributor of Westinghouse appliances in New York City, Westchester, Nassau and Suffolk counties.

Here's how the contest works, as explained by Arthur F. Callahan, vice president and general manager of Times:

Any time until Sept. 3, salesmen in retail stores may ask Times' wholesale salesmen any question about the selling features of Westinghouse major appliances. Each week questions may be asked about a different product.

The "stumping" can be attempted when the wholesale salesman is in the retailer's store. But each time the retail salesman stumps the Times' salesman on any question about the selling features of a major appliance, he receives a dollar. Questions must be answerable by information in sales literature and selling, as well as recipe books.

There's no limit to the number of dollars a retail salesman may receive.

"In fact, the more money we pay out, the happier we'll be," Callahan explained.

"Because when we pay these dollars for 'stumpers,' we'll know our dealers and their salesmen are reading our sales literature. And that's a foundation of any sales training program, and the basic purpose of this contest," Callahan concluded.

Callahan, Paul McNulty, Times' sales training director, and Frank A. Lowery, Westinghouse factory representative in this area, are judges of the contest.

2 Appliance Producers Receive Defense Orders

CLEVELAND—Two more appliance manufacturers have recently announced receipt of defense production contracts.

Apex Electrical Mfg. Co. here has obtained more than $15,000,000 in sub-contracts, C. G. Frantz, president, revealed. He said that these contracts will more or less offset the decline in production of appliances.

He estimated that by the latter part of this year, production of consumer goods will be decreased by 50% at Apex.

A. J. Lindemann & Hoverson Co. of Milwaukee announced that it has received a Navy anti-aircraft ammunition contract amounting to about $1,300,000.

The firm said that it is already producing tank tread pins on a subcontract at the rate of $180,000 worth of pins per month. Defense work now amounts to about 20 to 25% of its total production, the company declared.

Weatherproof Meeting Place

Air Conditioned School In Sand-Blown Town Serves as Dance Hall and Community Center

McKITTRICK, Calif.—This sand-blown hamlet with more oil wells than people has opened what is believed to be the most completely air conditioned school in the United States.

A bus now picks up its 65 youngsters—the entire student body—from the far reaches of their 180 square-mile district in the dry desert of western Kern county and takes them to their new dream school, a $260,000 building provided with $28,000 worth of all-year conditioning equipment.

The building is surrounded by clusters of grimy oil derricks that populate the vast wasteland. Yet it's to these derricks that the children owe their oasis-like development.

Every oil well pays taxes according to its longevity, its production, the gravity of its oil, and what the market is paying at the time of assessment. With that kind of money, a school district of only 300-odd people could well afford an air conditioned school with an auditorium and a cafeteria, teachers' lounge, six big classrooms, and homes for its principal and teaching staff.

"The new school has become our weatherproof meeting place," says Principal Frederick Ammann. "It's our movie hall (Ammann himself runs the projector), our dance hall, our banquet hall, our entertainment center, our community building. And best of all, it's a fine place to teach our children."

Ammann and his modern-minded board of education justify the air conditioning system on the basis of liveability. With a wide range in temperatures—zero to 115°—they were certain that air conditioning was a necessity.

Many types of units were considered. But in every case, two separate systems would be required—one for heating, in the winter; and one for cooling, in the summer. So Ammann and the board decided on Servel year-round air conditioners.

Also, he says, the architects who recommended the Servel system took advantage of the one product McKittrick has in quantity — natural gas—and harnessed it to run the air conditioning units, as well as the ranges and refrigerators.

"Loyalty to the oil industry," Ammann explains. "After all, it pays the taxes."

After more than a year of careful planning and investigating, here's what the board and the architects, Wright, Metcalf & Parsons, of Bakersfield, decided on:

Rooms are the square-type classrooms, with large windows to the north. Built-in cabinets contain space for students' wraps, teachers' private closet, storage for supplies, and a sink with a small work table. Artificial light is provided by four 1,000-watt concentric ring fixtures. Rooms are painted pale green.

Hot lunches for the children are prepared in the kitchen and served in the lunchroom, near the auditorium.

Administrative unit consists of an office for a teaching principal, which connects directly to a classroom. A nurse's room is located just off the principal's office. A teachers' lounge is provided with an adjacent kitchen.

The whole building forms an inner court, which can be used on spring and summer evenings to seat some 600 people in an open air theater protected from the wind. The floor of the building is concrete, covered with asphalt tile. Ceilings are of acoustic tile. Roofing is white asbestos shingle. Doors are flush birch, left natural in color and varnished.

In addition to this, the school authorities are building homes for Principal Ammann and the teachers, homes which will be free to them as long as they stay.

ARE PROFIT DAYS

...when you sell this new, low-priced FEDDERS Room Air Conditioner!

fedders
A GREAT NAME IN COMFORT

WHAT do you mean, dog-day slump? Not with Fedders sensational new ⅓ ton window model that slashes the cost of home air conditioning! Last year, dealers chalked up a doggy 300% spurt in Fedders sales—while all other units *combined* rose only 100%. And here's why Fedders will move even faster this summer:

1. Brand-new line, spearheaded by the low-cost full ⅓ ton capacity unit! Also full ½ and ¾ ton capacity window models, and 1 and 1½ ton console models.

2. Rich mass market that keeps on growing! In New York City, *70% of Fedders sales were to people in the lowest three income groups!* Defense plants, hospitals, laboratories . . . plus professional and business offices and homes!

3. Biggest, most powerful doggone ad campaign in industry history! Magazines . . . radio . . . TV . . . direct mail.

4. Two sales plans — completely worked out for you — to help pull prospects into your store. Hot dog!

For complete information on how to make extra profit selling the 1951 line of Fedders Room Air Conditioners—and the new Dehumidifier—write today! Fedders-Quigan Corp., Dept. AC-6, Buffalo 7, N. Y.

New Fedders profit-maker!
ELECTRIC DEHUMIDIFIER
The newest, best-looking, hardest-working unit on the market—and what a market it is! It's being backed up with the pile-driving kind of advertising and sales promotion support you have come to expect from Fedders. Get the facts. Write today!

Air Pollution Problems

Lack of Standards for Measuring Gases, Odors Hinders Development of Control Equipment; More Information, Cooperation Vitally Needed

BALTIMORE — Public sentiment against industrial air pollution has reached the point where the expense involved to prevent such pollution must be considered by the process plant owner as the price that society demands of him for permission to operate his plant.

So declared A. G. Christie, professor emeritus of mechanical engineering, Johns Hopkins university, in addressing the Second Process Industries Conference sponsored by the Process Industries Division and the Baltimore Section of The American Society of Mechanical Engineers at the Lord Baltimore hotel.

If every reasonable measure to abate the discharge of objectionable products into the atmosphere is not taken voluntarily, it will be forced by more restrictive legislation, Prof. Christie warned.

Many process plants have installed smoke prevention equipment and dust catchers, he said, adding that the electrical utilities have been and are conscious of public opinion and are generally interested in civic betterment.

They have led in the installation of this equipment, said Prof. Christie, and now no new central station is designed without such devices. A considerable part of the decrease of visible smoke from such plants is due to improvements in fuel-burning equipment and furnace construction, he pointed out.

"Gases, vapors, and odors from process plants contribute to air pollution," said Prof. Christie. "Certain odors are not in themselves offensive yet even the persistent smell of a food processing factory may become obnoxious if prevalent all of the time in a neighborhood.

"Certain gases and vapors from process industries are objectionable due to their destructive action on vegetation or their corrosive character. Much has been done in the metallurgical industries to lessen the discharge of such gases. Chemical industries are frequently faced with the problem of gas or vapor emissions of an obnoxious nature. Other industries have similar problems.

"There is no method known at present in many cases, by which these discharges may be recovered at any reasonable cost or which would yield a return on the operation. In other cases, no economic use can be made of the recovered products and their ultimate disposal adds further problems.

"It is in the interest of all process industries that executives of concerns which are coping with problems of gaseous discharges, should give full publicity to their experiences so that other managers may attack their problems of air pollution with more factual data."

Many process industries use chemicals and solvents from which certain gases and vapors escape through chimneys or vents into the atmosphere, he said, pointing out that these may be caught in cooling, washing, or absorption processes and may possess commercial value.

In other cases, their recovery may prove expensive yet necessary. It is not sufficient to wash these gases or vapors from the air only to form foul-smelling water courses in which fish cannot live, he declared.

He said both ordinance administrators and plant operators "are handicapped by the lack of simple standards to measure air pollutants. The Ringlemann chart used for smoke measurement has many faults and is little good on dust or gaseous discharges.

"Visibility alone is an uncertain standard. The ASME Code on smoke measurement involves a lengthy test. Meters based on light intensity through a gas column have merit for smoke or dust measurement.

"At present there are no standards for gases and odors and no simple means of measuring their amounts. Much development of standards remains to be done."

Anheuser-Busch Brewery Installs York Indirect Refrigeration Throughout

YORK, Pa.—The world's newest and most modern brewery, the $20,000,000 Anheuser-Busch plant erected in Newark, N. J., employs "Freon" turbo glycol brine cooling systems with glycol used as the coolant throughout the brewery.

This was announced by York Corp.'s vice president and general sales manager, John R. Hertzler.

Preliminary plans contemplated the use of "Freon" turbo systems to condense ammonia that would be circulated to the large cellars for direct expansion and for the cooling of the heat exchangers. These would, in turn, cool propylene glycol for the attemperator rings and wort coolers.

Analysis of this arrangement indicated that it could be simplified, the horsepower per ton reduced, and greater safety provided by the use of the indirect method of refrigeration throughout.

The system consists of two 710-hp. steam turbine driven and one 800-hp. synchronous motor driven "Freon-114" turbo glycol brine cooling systems, Hertzler said.

Other equipment for the brewery includes 28 York air conditioners, 22 units of which are in the Cellars building, six units in the Bottling House and six York finned coil sections for the chip cellar. All the offices will also be air conditioned.

The Anheuser-Busch Newark plant is the company's first brewery beyond the St. Louis city limits. When in full operation, this plant will produce one million barrels of fully aged beer per year, and represents the first unit of Anheuser-Busch's plans for the Newark area.

MISSING SOMETHING?

More and better useful information is yours for the asking. See "What's New" page.

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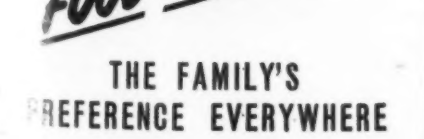
THE FAMILY'S PREFERENCE EVERYWHERE

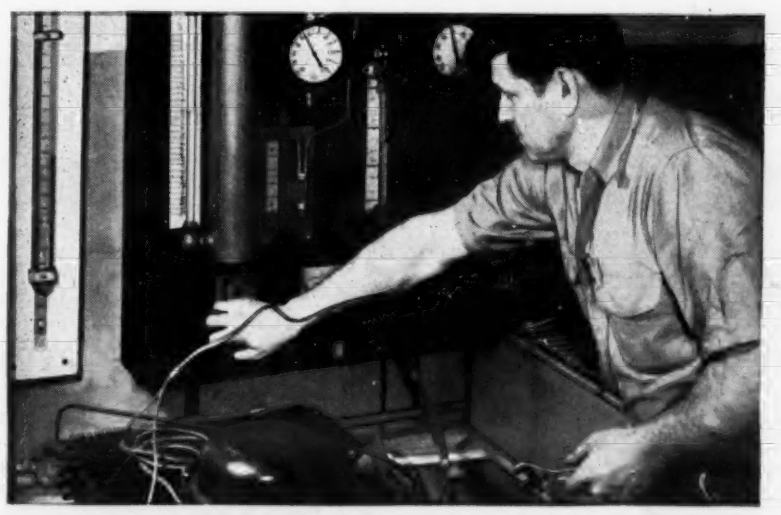


Revco, INC. • DEERFIELD, MICH.

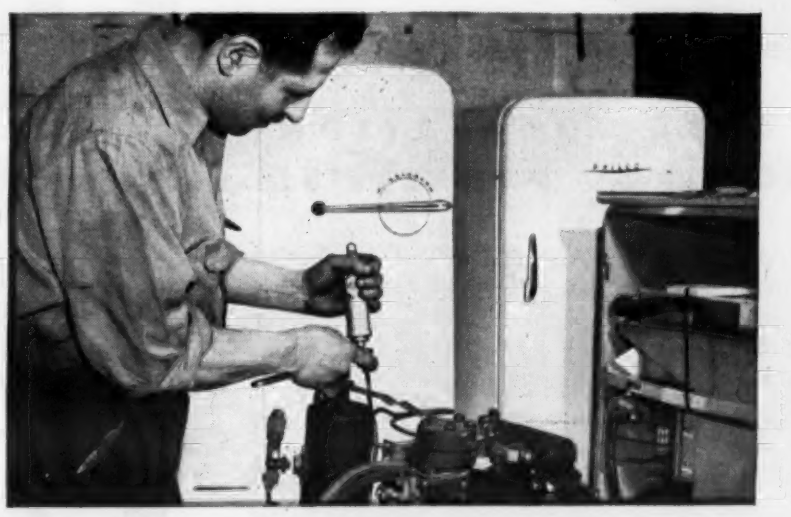
HOW TO GET THE MOST OUT OF SUNISO REFRIGERATION OILS

SUNISO OIL comes to you clean and dry—less than 20 parts of moisture per *million* parts of oil. Keep it that way for best results. Pry off the airtight seal with *clean* tools. *Replace the cap immediately* after drawing off the oil, thus keeping the remainder from absorbing moisture from the atmosphere.

CHARGING COMPRESSORS sometimes calls for a funnel or a piece of tubing; *make sure they're really clean.* A little dirt can do a lot of damage to closely machined and fitted parts. If you suspect you've gotten dirt into the oil, discard it. Your reputation is worth more than a can of oil.



IN CHARGING HERMETICS, the only way you can do an exact and thorough job is to use a well-designed charging board. Proper maintenance of this equipment is important. To be sure of getting the long, trouble-free service for which hermetics are noted, keep supply tank, tubing and valves *as clean as you possibly can.*



INSTALL A DRIER whenever you have reason to believe the oil or the system has picked up moisture. Frozen moisture can clog capillaries, expansion valves and other important parts. Properly installed, a silica gel drier—like this one being connected to a domestic unit—is highly efficient. It can save you many a service call-back.

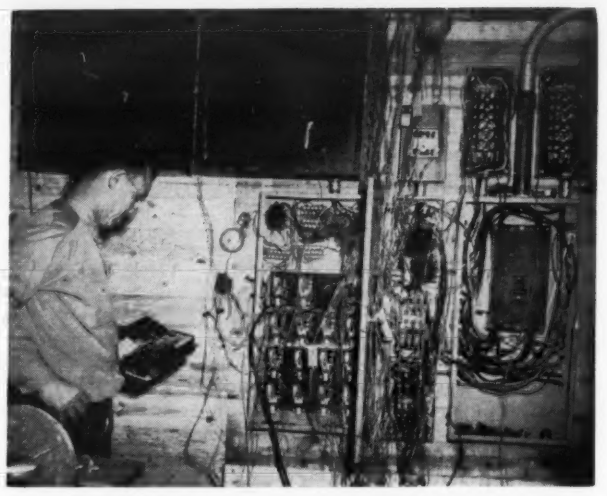
Johnston Refrigeration of Detroit, where these pictures were taken, has used Suniso exclusively for 14 years. The shop foreman says that, unlike some of their competitors using other oils, they have never had wax or sludge problems. Many of the units Johnston services have not had to be recharged in over 12 years. And some of the boxes they service run constantly at −35F. For a free booklet describing the various grades of Suniso Refrigeration Oils, call the nearest Sun Office or write to Department RN-6.

SUNISO REFRIGERATION OILS

SUN OIL COMPANY, PHILADELPHIA 3, PA. • SUN OIL COMPANY, LTD., TORONTO AND MONTREAL

SUNOCO

IN THE KITCHEN of Hasenkamp's all-electric house in Chattanooga is a built-in, chest-high oven, only one of the many appliances operated automatically. Selector panel keeps Mrs. Hasenkamp in touch with any other part of the house by audio system. There is even an indicator light to tell her whether there is mail in the mailbox.



THIS METER CENTER located in the basement is the heart of the all-electric house. Low voltage relays, modutrols, variac cathode dimmers are found here among the hundreds of small control wires. All 43 main circuits are wired to this panel so that future changes can be made easily.

How 'All-Electric' Can You Get?

Chattanooga Electrical Contractor Rigs Up His Home To Operate By Pushbutton from Automatic Heating to a Lawn Sprinkler Brain

CHATTANOOGA, Tenn. — How "All-Electric" can you get?

Contractor-inventor J. Frank Hasenkamp doesn't know exactly, but he is working hard to find out in his new home.

Hasenkamp, who has been in the electrical industry since 1932, and his wife, have just built a new 8-room home here and are making it the most electrified home in the world.

If you are inclined to scoff, just listen to what this watt-happy couple have done and are doing to their "home of the future today."

As a visitor on a tour of inspection, start at the front door. When you push the announcer button, chimes begin to play. That push also energizes the porch lighting system. An audio system permits anyone anywhere inside the house to talk with you without leaving the room he is in. If you are welcome, the door opens automatically, and you enter.

In the living room, you first notice the glareless lighting and the lack of evidence of any heating system. Lighting in the living and dining rooms is extra special. The heating is in the ceiling.

A 3-in. trough attached to the walls around the room except at door openings and just at the top of the window line houses cold cathode fluorescent lamps. These reflect against and around the upper walls and ceilings due to a beveled ceiling corner.

Hasenkamp has added a variac and found that he can dim or intensify the room lighting at will. Hot cathode fluorescents do not have this flexibility, he found.

"Ceil Heat" invisibly radiates from the ceiling where it is installed in the plaster. Everything is warm to the touch without air currents. The only visible indication of heating is a thermostat set in one wall of each room.

Plug mold convenience outlets are in the baseboard around the room. All lighting switches are banks of low-voltage control system plates which turn on lights in one room or other rooms ahead of you as you select. The whole house lighting system may operate from some central points such as the kitchen, bedroom, and garage.

The living room has the central radio control for the house, beside television. Programs by the radio may be set for 24 hours in advance, not only for time, but by stations at 15 minute intervals.

In case Hasenkamp is away, a tape recorder will automatically cut in and play back the desired program when he gets home. He doesn't have such an attachment for the telephone—yet.

The Kitchen—a Woman's Delight

Let's move into the kitchen—where any woman would go crazy with delight. A Thermador electric range top panel is set into the blue top work surface that runs around the room. The oven is set into the wall at chest height so that it can be used without any bending. It is complete with switches, timer, and all appurtenances.

Naturally the room has all other modern electric appliances such as refrigerator, dishwasher, sink, and garbage disposal unit.

The kitchen selector system gives Mrs. Hasenkamp instant communication with any point around the property, access to the radio, and anything else she wants.

In this panel is located the brain of the audio system. This brain selects the channel from which any voice is coming and automatically puts the return answer to the right spot.

Another switch here, when flipped, will tell her by indicator light whether there is any mail in the RFD box out in front.

The adjacent breakfast nook has plug-ins all around the base of the table top as has the kitchen cabinet built-in top.

Lazy Man's Bedroom

Now let's take a look at the bedroom. Another mecca for the lazy.

This room, too, has an electrical selector system built right into the headboard of the bed. Only a special wide baseboard carrying the wiring and the panel in the head of the bed are visible.

When the Hasenkamps go to bed in the evening, they can open the windows by pushing a button at the head of the bed. They can also turn on or off all the lights in the house, and a prowler light in the yard. They can check all door locks and all windows and receive a warning if some outside window or door is opened.

A night light path to the bathroom is also accessible at the bed, as is the telephone and audio system.

In the morning, a favorite radio program, automatically set the night before, awakens the Hasenkamps. A push of a button and the drapes silently glide open and the aluminum awning style window opens or closes.

When Hasenkamp hops out of bed and goes to the bathroom, the muted radio follows him at the same tone through speakers inset in the walls. These speakers are located all over the house.

After taking a shower, his hair dries under an inset heat lamp as he brushes his teeth. When he replaces the brush in a rack, it is automatically sterilized by sterilamp. So is his water glass.

Can This Be a Bathroom?

Other features here are a deodorizing lamp, reading rack, cigarette lighter, telephone, and audio system for communication to any spot.

Now, how about the basement. The handrail down the stairs has night lights under the rail all the way. Coming up these stairs with arms loaded, Mrs. Hasenkamp finds the door at the top opening automatically for her.

The laundry section has automatic washing and drying equipment and a chute from the bedroom. A side room of heavy concrete construction houses a cooler and walk-in freezer. The latter is powered by a ¾-hp compressor. The room can also double as a bomb-shelter, Hasenkamp notes.

The game room, not yet completed, will have everything imaginable. Inset beside the bar will be a juke box, pinball game with automatic features, automatic card flipper, and 16 mm and 8 mm projector for movies. The projector may be swiveled through a window spot for yard showing to guests on the patio above.

And, naturally, there is the radio, telephone, television, and selection switches for communication and lighting.

Heart of the Home

In the basement is also the meter center. It has some hundreds of small control wires for the low-voltage control system used throughout. Some 43 main circuits terminate and are fused here, with 14 of them two-pole circuits.

Other features include heating time clock for the bedroom, modutrol controlled variac cathode dimmers, modutrol controllers for motors operating the windows, transformers for fluorescent lamps, modutrols and Leach low-voltage relays.

All circuits are wired to this panel rather than in series so that future changes may be made to switches by simply changing connections here.

Of course, Hasenkamp hasn't overlooked automatic lighting and audio system for the garage and automatic garage door openers.

Think you've heard everything? Then sit down a minute.

We noted that Hasenkamp is an inventor as well as a contractor. And his prize invention right now is an automatic lawn sprinkler brain. This control by automatic time clock can sample each section of the yard for moisture content and can turn on the sprinkler for that section if needed. It samples the yard in five seconds.

Hollywood Style

Although not constructed yet, a fish pool is planned that will have colored lights which change hue according to and in time with the music on at the time.

Though Hasenkamp hasn't got everything hooked up yet and only lives in a portion of the house at present, he figures that his total electric bill for everything except winter heating will run around $10 or $11 per month (at low TVA rates used in Chattanooga).

He intends, he says, to use an attic fan for ventilating the house.

here's your answer

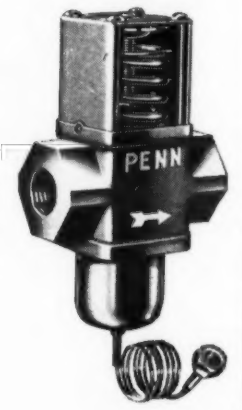
TO REFRIGERATION CONTROL PROBLEMS!

Tough defrosting job? Water-cooled jobs that are "mean" to handle? Want to control multiple refrigeration systems with one switch . . . or control polyphase motors without line starters? The answer to these and other control problems is . . . PENN.

Yes . . . just like in most other products . . . there is also a big difference in automatic controls. And once you try PENN controls you'll learn that their performance *on the job* is the strongest recommendation for using PENN on every commercial refrigeration system.

In the complete PENN line, there is a type and model to fit your exact needs . . . a few types are illustrated here, there are many more. Take the first step in trying these better controls. Get your free copy of PENN's condensed catalog and price list. Ask your wholesaler or write **Penn Electric Switch Co., Goshen, Ind.** Export Division: 13 E. 40th Street, New York 16, U.S.A. In Canada: Penn Controls, Ltd., Toronto, Ont.

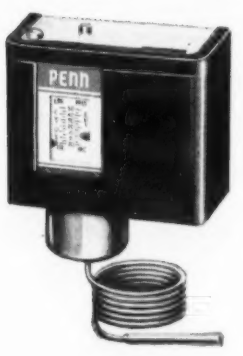
Penn Magnetic Line Starters are built in NEMA Sizes 0, 1 and 1½ and are available as open-type models for control panels or with General Purpose enclosures.



Series 246 Water Valves, zoned to keep water out of sliding parts, are built in threaded and flanged styles for all refrigerants and in sizes from ⅜" to 2½".

Series 275 Oil Protection Control with built-in Time Delay Switch for pressure-lubricated compressors prevents damage from low or slow pickup of oil pressure.

Penn Series 325 Time-Pressure Defroster varies automatically the defrost period to satisfy load conditions . . . eliminates seasonal adjustments . . . avoids unnecessary shut-down time.



Penn Series 270 temperature and pressure controls have 2-pole construction and a direct reading calibrated scale which shows both cut-in and cut-out points.

Penn Series 221 Solenoid Valves are direct acting and may be used with all non-corrosive refrigerants as well as for water, oil or air.

PENN AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES

OPPORTUNITY OF A LIFETIME

The owner of one of Washington's (D.C.) oldest and finest businesses in air conditioning, refrigeration and kindred lines will consider the sale of same to responsible party/s who will carry on the name of same, with all that it implies.

Distributor franchise for a nationally known and complete line with thousands of local installations.

Large display, shop, garage and storage facilities; fully equipped, inventoried and completely staffed with sales, engineering, installation and service personnel including machine shop and motor repair and maintenance facilities.

Excellent government contacts and customer goodwill, making expansion absolutely unlimited. A-1 Trade relations.

Requires about $25,000 for deposit and working capital. Long terms on out of profits basis. Owner has other interest but will be available on advisory basis.

Submit full details to Box 3751, Air Conditioning & Refrigeration News.

REFRIGERATION SPACE aboard the new $200,000 yacht "Westlake," included a 12-ft. service box, 10-ft. quick freeze compartment, and a 54-ft. walk-in box. Galley also has a Monel Metal drainboard and sink with garbage disposal unit, restaurant size range, and Laundromat washing machine.

Air Conditioned Yacht

Complete Refrigeration, Air Cooling Facilities Built Into 85-Ft. Private Yacht on West Coast

SAN FRANCISCO—Air conditioning and refrigeration are going to sea in the biggest private yacht to be built on the West Coast during the past 20 years.

The Stephens Brothers' 85-ft. cruiser "Westlake," is fully air conditioned with a 1-ton G-E system in anticipation of Central American cruises planned by owner Henry Doelger, famed home-builder of San Francisco.

About the size of an average 5-room house, the $200,000 yacht sleeps six plus a crew of three. In addition to three staterooms, there is a main salon, dining salon, galley, crew quarters, and pilothouse.

Refrigeration aboard is supplied to the galley as well as to the air conditioning system.

In addition to a 12-ft. service box, there is a 10-ft. freezing compartment and a 54-ft. walk-in box. An ice-holding compartment is built into the bar in the main salon of the yacht.

A half-mile of Chase copper sweat tubing is built into the pre-priority yacht. Chase fittings with solder joints and Chase flare fittings were used.

The galley also has a Monel Metal drainboard and sink with garbage disposal unit, restaurant-size range, as well as a Laundromat washing machine.

Heating is supplied by a diesel-burning hot water boiler with uniflow single line piping. Fully automatic, it is designed especially for marine installations by Way-Wolff and is similar to that installed on the Presidential Yacht Williamsburg. In addition to heating the cabins, it is also piped to the galley, lavatory, and three complete bathrooms.

Fifteen hundred gallons of fresh water is carried in Monel Metal tanks built into the hold. Additional tanks carry 2,500 gals. of fuel.

3 Separate Air Conditioning Systems Cool Multiple-Level Restaurant

MONTGOMERY, Ala. — Installing three entirely separate air conditioning systems to provide comfort cooling for the Elite Cafe, huge combined food service, cocktail-lounge institution here, is the means by which Nolin Refrigeration Co., air conditioning contractor here, solved an unusual problem.

The Elite Cafe, which serves 1,500 people per day, includes a "deluxe dining room" seating 100, the Casino Room, a cocktail lounge, with dance floor, seating another 75, and the Crystal Cafe, the original, lower-price restaurant, started by owner Peter Xides.

When Xides invested $225,000 in late 1948 in creating a huge multiple-purpose food service institution, he found it necessary to lease building space from three different landlords. Thus, the combined dining room, sandwich counter service, cocktail lounge, dancing lounge, and kitchen at various levels, and partitioned off by various walls, are necessarily property of different landowners.

Realizing that necessity of giving up any of the space, or enlarging, etc., would result in serious problems if a single air conditioning system was used, Xides worked with Nolin Refrigeration Co. to design three separate systems, which would total at least 55 tons cooling capacity. To make such an installation feasible, tightly-fitting swinging doors are installed between cocktail lounge, the two restaurants, and the sandwich rail to prevent load from one section interfering with cooling in the other.

To maintain a comfortable temperature of 80° F. with 50% or less relative humidity, three Worthington compressors were installed in three separate basements, each with its own cooling tower, plenum chamber, ductwork, and controls. The largest unit is a 20-ton compressor, which supplies chilled water for the plenum chamber serving the Elite Cafe dining room.

Some 11,000 c.f.m. of conditioned air is circulated through this largest room, with an electronic filter precipitating out smoke and food odors. Anywhere from 30% to 100% fresh air can be admitted by a dampered inlet at the rear of the building.

For the Casino Room, which operates with a light load during the day, and a heavy load in the evening, a 15-ton Worthington unit was likewise installed, again with its own cooling tower, blower chamber, and controls.

This compressor is designed to operate in two stages, of 10 tons each, for comfort cooling through the slack day, kept up during the cocktail hour, and again during the evening, when a band provides music from 5 p.m. until 1 a.m.

In the Crystal Cafe, smallest of the three major sections, a 10-ton package air conditioning unit, proved to be the ideal answer. It is supplied with simple exposed ductwork down both sides to cool the relatively smaller area.

FOR COOL PROFITS
TIE UP WITH
TYPHOON
PACKAGED AIR CONDITIONERS
1½ TO 20 TONS
EVAPORATIVE CONDENSERS
3 TO 20 TONS
Over 40 Years of Air Cooling Experience
TYPHOON Air Conditioning Co., Inc.
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Profit by selling the American "Aristocrat" line
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A TOUGH Welding Problem solved by STANDARD

The refrigerated container bottom shown above is fabricated of *stainless clad copper sheet* which is spot, seam and projection welded and then tested at 500 lbs. pressure, to form the piece you see.

STANDARD has contributed entirely new stamping and welding advances in the fabrication of stainless clad copper, combining the cleanliness and strength of stainless steel with the rapid heat transfer of copper in the manufacture of heat exchanger plates and containers.

This is but more evidence of the capability of this up-to-date, modern plant equipped with versatile machinery and staffed by men experienced in the production of heat transfer equipment. It may pay you to look to STANDARD for original and unique manufacturing processes for *your* product.

Production facilities are available at STANDARD for the prompt and experienced handling of Government orders.

STANDARD REFRIGERATION CO.
Manufacturers of Heat Transfer Equipment Since 1920
Office: 332 S. Hoyne Ave., Chicago 12
Factory: 3535 W. Fillmore St., Chicago 24

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...then start now and install
BRUNNER SINCE 1906 AIR CONDITIONING

Last year we increased our production schedules on Brunner Self Contained Air Conditioners three times—*demand was triple that for which we had planned.*

This more than anything else we can tell you, proves that in a highly competitive market, Brunner units offered more of what the buyers wanted.

When a prospect asks what you have to offer it's a mighty satisfying feeling to say "Brunner," then proceed to show him design features that even a layman can understand will deliver air conditioning values which more than justify the investment.

There is no reason why you should sell the hard way—sell BRUNNER. It costs nothing to listen so use the coupon to make a date.

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Tear out and Mail! I'm willing to do more business. Have your factory field representative stop in and bring me up-to-date on what Brunner has to offer me as a dealer. Send current catalogs in the meantime.

Name _____
Company _____
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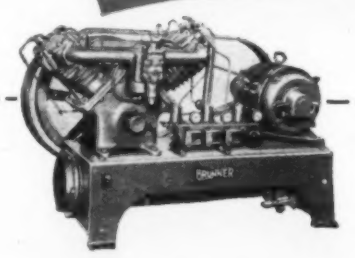
City and State _____

BRUNNER SINCE 1906 AIR CONDITIONING
● Self Contained 3 HP. to 10 HP.
● Remote Type 3 HP. to 75 HP.
Completely Brunner built . . . backed by a fine reputation forty-five years old.



REFRIGERATION CONDENSING UNITS by BRUNNER SINCE 1906
AIR AND WATER COOLED MODELS—*a size and type for every purpose*...¼ HP. TO 75 HP.

They'll Do It Every Time . . . . By Jimmy Hatlo

HERE! GIVE ME THAT CHECK! IT'S MY TURN TO BUY SOMETHING!!
PLEASE! THIS IS MY CLUB··· YOU CAN TAKE IT AT YOUR CLUB!
BIGMOUTH KNOWS A GUEST CAN'T PAY IN THIS CLUB··· HE WOULDN'T OPEN HIS YAP IF THIS WERE A PUBLIC RESTAURANT!
HE'S BEEN A GUEST OF EVERYBODY IN THE CLUB··· HE'S HERE MORE THAN THE MANAGER···
WHAT CLUB DOES HE BELONG TO··· THE KNIGHTS OF THE DUSTY ROAD?
THE LAST THING HE BOUGHT WAS A PAIR OF PANTS CLIPS BACK IN THE HIGH-WHEEL BIKE DAYS···
LISTENING TO THE GUEST MAKE THE GRANDSTAND GESTURE···
THANX TO MANY DUES-PAYING CLUB MEMBERS—
JIMMY HATLO
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Do You Have 'Both Feet On The Ground'?

How "one point" can clinch the sale!

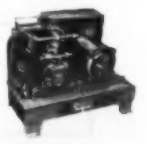
10 New Hermetic Models

Kelvinator *Top Quality* Condensing Units!

Point to the Kelvinator name-plate—and see how that name reads "finest quality" to your condensing unit customers! Now more than ever, as the demand for dependability and finest quality increases, Kelvinator Condensing Units can make sales and build business for you. Check Kelvinator's wide range of 10 new hermetic models, up to and including ½ H.P. Each is precision-built and tested to rigid Kelvinator standards. Each is competitively priced—and performs at peak efficiency. Get and hold good business and good-will—sell Kelvinator on your next new or replacement installations.

For complete information, call your nearest Distributor or Zone Office. Kelvinator, Division of Nash-Kelvinator Corporation. Detroit 32, Michigan.

A selection of 15 Kelvinator Open-Type models from ¼ H.P. to 5 H.P. is also available.



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"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—*Charles A. Dana.*

Is Uncle Sam Considered 'Uncle Sucker' Abroad?

SOME OF our best friends and presumed Allies have created a scandalous situation by shipping vital supplies to enemies since the outbreak of war in Korea, according to James J. Newman, vice president of The B. F. Goodrich Co.

Newman, upon returning from a meeting of representatives from 22 nations in Rome, declared:

"We would not now be facing a critical rubber situation in the United States if unusually large quantities of rubber had not been sold to Communist China, and to Russia and her satellites, by nations who should be in the fight for liberty with us all the way.

"Nearly all of the rubber producing countries have received or are receiving aid from us under the Marshall Plan. To put it bluntly, they have 'bitten the hand which has fed them.'"

Another thing that incenses the Goodrich executive:

"Our government should avoid long range fixed price agreements," he continues. "Such arrangements have been wholly unsatisfactory to American consumers in the past. Present price agreements legalize inflation in the face of an expected world surplus of more than 500,000 tons this year.

"Every motorist in the United States who is now worried about his ability to buy tires when he needs them should ask his Congressman to find out if Far Eastern rubber producers continue to encourage the sale of rubber to our enemies for the purpose of maintaining the present inflated prices, which have made scores of overnight millionaires in the rubber trading centers and cost American consumers millions of dollars.

"Every American should ask why it is that nations, supposedly our allies in this fight for liberty, have sold unusually large amounts of rubber to those who have sworn to conquer us. They also should ask how China, an impoverished land, has been able to acquire the nearly 200 million dollars to buy the 120,000 tons of rubber purchased from British Malaya in the past nine months. Other large tonnages are going from the Republic of Indonesia, which reveals no export figures."

This international observer insists that exports to avowed enemies could seriously handicap our national defense effort, and disrupt our transportation and industrial systems. Reviewing our international obligations, as well as consumer shortages in this country, Newman points out that responsibility for the present situation rests with our government, which has entire control of every major phase of imports and exports.

Our administration, he insists, has disregarded the advice of American industry as to increasing production of American-made rubber, and some other strategic materials.

Amounts of these materials allocated to civilian industry have been too low, and the stockpile objective is much too high, according to many experts who, like Mr. Newman, are "in the know." Furthermore, concessions made to allies who trade with The Enemy are foolish.

Congress has set about to rectify this situation by forbidding further dollar aid to nations which sell vital supplies we need to *their* enemies and *ours*. Whether or not the law can or will be enforced remains to be seen.

We await developments with considerable apprehension.

SALES ROOM at Hill Hatchery in Lincoln, Neb. is an example of the increased use of refrigeration in feed stores and hatcheries. Ralph Corliss, manager, points out two coin operated coolers for soft drinks and freezer at right for antibiotics.

Feed Stores, Hatcheries Find It Profitable

Grade A Milk, Better Animal Care Boost Use of Refrigeration In Neb.

LINCOLN, Neb.—Feed stores and hatcheries in Nebraska are using refrigeration to increase their profits, both directly and indirectly, as a result of expanding Grade A milk programs that demand mechanical coolers, and the advancing science of animal health which calls for use of antibiotics in the care of livestock and poultry.

A refrigerator for serums and similar animal health products serves to boost profits at the Lancaster County Farmers Feed & Chemical Co. here, reports L. E. Rook, manager. In addition, the firm pushes the sale of mechanically-cooled boxes for milk storage, and business in this line has nearly doubled in the past year as a result of displaying the coolers on the sales floor where feeds are sold.

Rook pointed out that a refrigerator installed behind the counter where farmers can see it holds an average of $2,000 worth of antibiotics and other animal health drugs requiring refrigeration. Appropriate lighted signs call attention to the drugs by brand name. He said that the refrigerated pharmaceuticals serve as an excellent traffic builder as well as yielding a handsome profit in themselves.

This store also features the DeLaval and Dari-Kool lines of milk coolers along with feeds and animal health products. Growing interest in Grade A milk production has caused a sharp increase in demand for such refrigeration installations on the farm.

The Hill Hatchery, 910 "R" St., Lincoln, is another example of how refrigerated antibiotics score profits for this type of business. A large size freezer such as is commonly used on farms for food storage has been installed in the sales room and stocked with animal health drugs for both poultry and livestock.

This store has such a large volume of traffic that the management also has found it profitable to install refrigerated vending machines for soft drinks.

Installed in line with the antibiotics case, one machine dispenses a single brand of carbonated beverage, while the second carries a variety of bottled soft drinks.

Farmers now make it a point to have their "pickup" drink of pop at the hatchery when they are in town on business connected with the hatchery, instead of stopping in at a drugstore or soft drink parlor, according to Manager Ralph Corliss.

Radiant Heating In Floor of Cold Storage Room for Fruits Keeps Workers Comfortable During Stocking and Unloading Operations

CASHMERE VALLEY, Wash.—Fresh fruits are protected from receipt to shipment by the unusual refrigeration system designed for the two new cold storage buildings of the Cashmere Fruit Growers' Union here.

The buildings are 240 ft. long, 120 ft. wide, and 20 ft. high. With concrete floors and walls, and a quonset-type roof, the two buildings are designed for heavy pallet operation.

A temperature of 35° to 40° is maintained at all times. Refrigeration is supplied by three 75-hp. and two 50-hp. Vilter compressor units, located in a single engine room. They supply eight overhead plenum units, located in the iron trusses supporting the quonset roof.

Placing the blower, coils, and defrost equipment above the floor left sorely-needed space free for storage of pears, apples, and other fruits, it was found.

Cooled air from the refrigeration units is distributed through the warehouse evenly by means of exhaust-type, circular outlets. These outlets may be turned in any desired direction to correspond with stacking of pallets, 20 ft. high over the warehouse floor.

A minimum circulation of 50 c.f.m. of refrigerated air is easily met by the units in cooperation. Each is automatically defrosted by means of warm water sprayed over two units at a time, over a period of eight minutes. Controls are in the engine room.

One of the most important features of the refrigeration system is the fact that the temperature in all areas can be quickly read from dial-type thermometers mounted on a control panel in the engine room.

Connected with sensitive thermocouples, located at various points around each warehouse, the thermometers keep an accurate record of temperatures and have done away with the necessity of entering the cold storage areas to take temperature readings.

For low-output operation during the cold winter months, each of the two 50-hp. compressor units is thermostatically operated and equipped with by-pass valves. Thus, output can be reduced by one third or two thirds as required. Considerable operating economy is the result.

Probably one of the most unusual features of the plant is the underfloor radiant heating installation in the packing areas.

Because employes, working for long hours in the low temperatures, were suffering from colds and complaining of chilled feet in a previous structure, which burned down a year ago, a steam radiant heating system was installed in the floor. This system keeps workers comfortable during stacking or loading operations, without appreciably affecting the over-all temperature.

Due to sharply varying temperatures during the year, the Cashmere Fruit Growers' Union puts a lot of emphasis on insulation in the design of the storage buildings.

Insulation includes 4 in. of cork, placed over 2-in. by 6-in. sheeting, with much care given to cork over the ends of the truss, truss support at joist connections, etc. Walls are insulated by 4 in. of cork, cemented on the exterior concrete wall, and covered with fireproof siding. The floor, chief cause of cold loss in the past, is insulated with 9 in. of pumice concrete over two feet of gravel, plus a 5-in., steel-rod, fine-grain cement floor.

Total costs for refrigeration operation are substantially lower than for a much smaller system utilized in the burned-out building, according to the management.

Appliance Firm Uses 25 Pages Of Advertising To Announce Sale

PAWTUCKET, R. I.—A total of 25½ pages of advertising in three newspapers was used by Apex Tire & Appliance Co. here to announce its annual "Celebration Days" sale.

The advertisements were run June 13, the day preceding the opening of the three-day event, in the *Providence Evening Bulletin*, *Pawtucket Times*, and *Attleboro Sun*.

Features of the event included $2,000 worth of free awards, $3,500 worth of free souvenirs, and refreshments, according to Frederick R. Glassman, general manager.

ANSUL REFRIGERATION OIL

THE NEW . . . IMPROVED . . . ANSUL REFRIGERATION OIL . . . IS A RESULT OF THE PERSISTENT SEARCH BY ANSUL CHEMISTS AND REFRIGERATION TECHNICIANS FOR THE FINEST QUALITY REFRIGERATION OIL . . . AT ANY PRICE!

Since Ansul Refrigeration Oil was introduced in 1949 . . . its acceptance by refrigeration men has continued to expand. In only two short years Ansul is one of the leading refrigeration oils *sold exclusively* through Refrigeration Wholesalers.

The New . . . Improved Ansul Refrigeration Oil is now available at leading refrigeration wholesalers everywhere. It meets, or surpasses, every specification established by Ansul Research for a high quality refrigeration oil.

BUY IT NOW AT THE NEW LOW PRICE. Use it for more dependable, trouble-free lubrication.

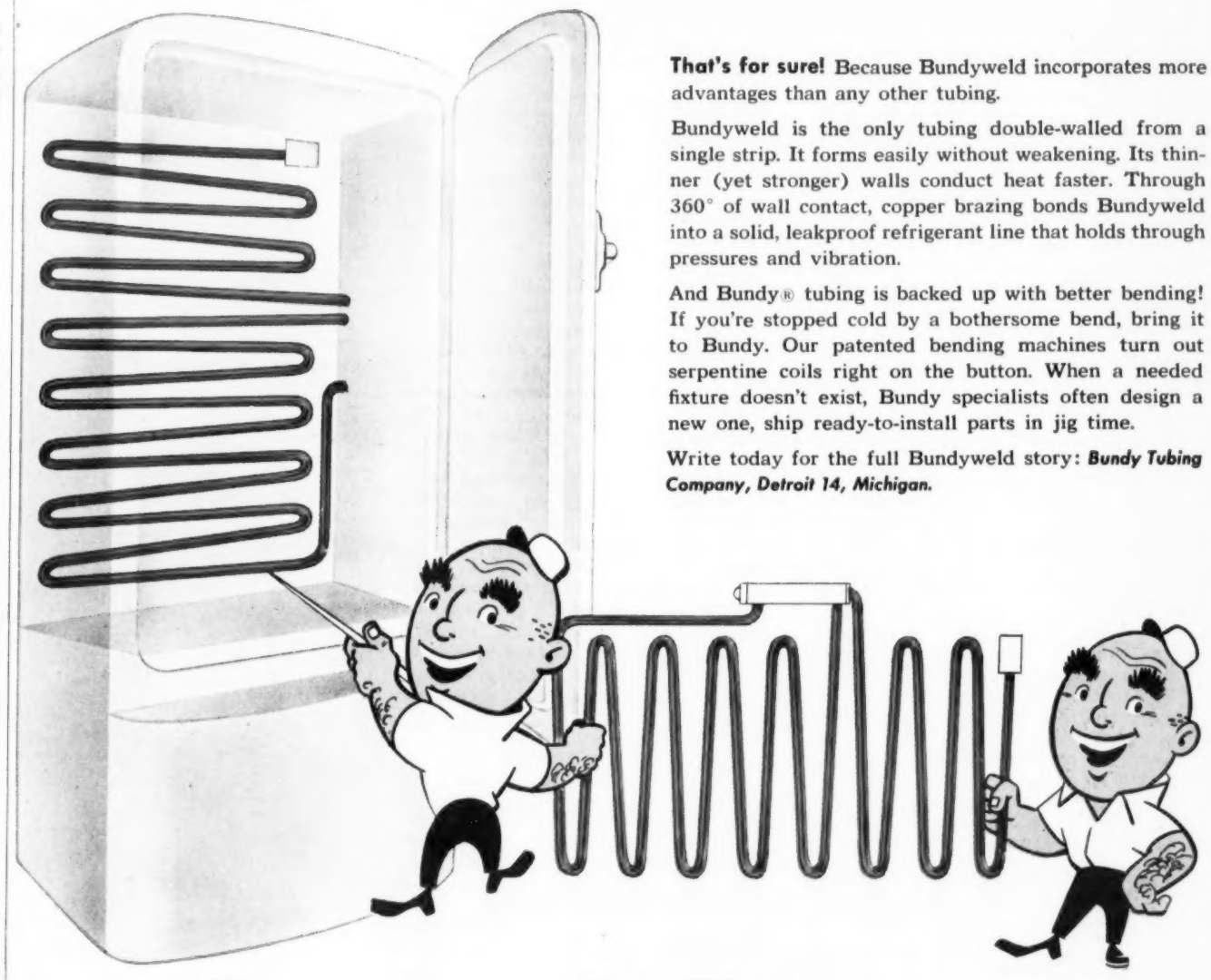
NOTE THESE IMPORTANT ANSUL FEATURES —

a. *Lower floc point.
b. *50% lower wax content.
c. Moisture — ANSUL CONTROLLED minimum.
d. *Lower pour point.
e. Rigidly checked for high stability.
f. *Lowest affinity for moisture.
g. New low price.
h. Available in quart, 1-gallon and 2-gallon cans; also in 5-gallon and 55-gallon steel containers.

*Improved features

ANSUL CHEMICAL COMPANY
REFRIGERATION DIVISION, MARINETTE, WISCONSIN
ANSUL SULFUR DIOXIDE, ANSUL METHYL CHLORIDE, ANSUL OIL, KINETIC "FREON" REFRIGERANTS
ALSO MANUFACTURERS OF INDUSTRIAL CHEMICALS AND DRY CHEMICAL FIRE EXTINGUISHERS

Bundyweld... backbone of better refrigeration



That's for sure! Because Bundyweld incorporates more advantages than any other tubing.

Bundyweld is the only tubing double-walled from a single strip. It forms easily without weakening. Its thinner (yet stronger) walls conduct heat faster. Through 360° of wall contact, copper brazing bonds Bundyweld into a solid, leakproof refrigerant line that holds through pressures and vibration.

And Bundy® tubing is backed up with better bending! If you're stopped cold by a bothersome bend, bring it to Bundy. Our patented bending machines turn out serpentine coils right on the button. When a needed fixture doesn't exist, Bundy specialists often design a new one, ship ready-to-install parts in jig time.

Write today for the full Bundyweld story: ***Bundy Tubing Company, Detroit 14, Michigan.***

Bundyweld Tubing®

DOUBLE-WALLED FROM A SINGLE STRIP

WHY BUNDYWELD IS BETTER TUBING

Bundyweld starts as a single strip of basic metal, coated with a bonding metal. Then it's . . .

continuously rolled twice around laterally into a tube of uniform thickness, and

passed through a furnace. Bonding metal fuses with basic metal, presto—

Bundyweld . . . double-walled and brazed through 360° of wall contact.

NOTE the exclusive patented Bundyweld beveled edge, which affords a smoother joint, absence of bead and less chance for any leakage.

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Study of Various Methods To Produce Low Temperatures Can Result In Better Operation

DETROIT — "Let's not jump to conclusions as to the refrigerant, type of compressor, or cycle to be used" in achieving low temperatures, E. R. Michel, assistant manager of the air conditioning and refrigeration division of Worthington Pump & Machinery Corp. advised refrigerating engineers here recently.

Speaking at the first technical session of the 38th spring meeting of the American Society of Refrigerating Engineers, Michel declared that, in many cases, a study of all the various methods of obtaining low temperatures—and there aren't too many—"may bring up one that is cheaper, more economical to operate, more simple to apply, or more reliable in operation."

In his paper, entitled "Low Temperature Refrigeration Applications" Michel reviewed the methods, refrigerants, and equipment available "in order that none of these be overlooked in this present world situation which is fostering increasing demands for more and more refrigeration at low temperatures, for testing, for research, and for production in chemical and industrial processes."

Covers Applications Of -20° F. or Less

He confined his discussion to applications below -20° F. evaporation, which, he said, marked the break point between single and multistage applications and requirement for special materials."

He first discussed refrigerants, giving their limits and the compressors used with them. This is what he said:

Ammonia is still perhaps the most efficient refrigerant and is quite commonly used for temperatures down to -85° F., which corresponds to 2.27 lbs. Absolute.

Since reciprocating compressors are limited by physical sizes as to volume capacity the use of even the largest of double acting, horizontal compressors limits capacity to about 75 tons in a single compressor at -85° F.

The low molecular weight with resultant low ratio of compression per stage and, ironically enough, the low specific volume of ammonia even at medium low temperatures prevents its use in centrifugal compressors execept for fantastically large tonnages.

Ammonia systems have been and are still very practical for temperatures down to -85° F. evaporation from both the initial cost and performance standpoint. In addition, ammonia is easily handled in direct expansion systems thus in many cases eliminating necessity of cooling some indirect medium used as a brine.

CO_2 with triple point at -69° F. is not used for low temperature work except in some chemical processes and as dry ice.

Dry ice and methanol solutions are, however, used for refrigerating small cold boxes or chambers with infrequent usage. On continuous use the added investment of mechanical refrigeration will be offset by the cost and, in some cases, the lack of source of supply of dry ice.

The "Freon" refrigerants have probably the widest usage today in the average low temperature system. There are many "Freons," each with different characteristics which lend themselves to any type of compressor to suit the refrigerant.

At present nearly all "Freon" reciprocating compressors are of the high speed, single acting, angle type design. These compressors even more than for ammonia are limited to small displacement, the largest today being about 650 c.f.m.

With about 77 c.f.m./ton required at -100° F. with 1.4 p.s.i.a. a single multistage "Freon-12" system of reciprocating units is only good for about six tons.

With "Freon-22" requiring about 55 c.f.m./ton at -100° F. and 2.14 p.s.i.a. a single multistage system of reciprocating units is only good for about 10 tons.

Tonnage requirements above these can be satisfied by multiple reciprocating units in parallel, or use of centrifugals as boosters or complete centrifugal systems with large tonnages.

The centrifugal, quite the reverse of reciprocating, is saddled with a low volume limit of about 1,200 c.f.m. at suction conditions for a three-stage compressor or about 1,800 c.f.m. for four-stage.

"Freon-11, 113, and 114," because of low pressures and high specific volume characteristics, are not generally used below -20° F.

"Freons-13 and 14" have been developed and appear well adapted to extremely low temperature. But they have not been used commercially to any extent and require cascade with other refrigerants to condense them at low temperatures to prevent excessive system pressures.

At -150° F. the corresponding pressures are 4.5 p.s.i.a. for "Freon-13" and 55 p.s.i.a. for "Freon-14"; at -50° F. are 71.7 p.s.i.a. for "F-13" and 542 p.s.i.a. for "F-14"; and at 80° F., "Freon-13" pressure is 535 p.s.i.a.

Thus a -200° F. system would involve "Freon-14" condensed by "Freon-13" at -120° F., in turn condensed by "Freon-12" or "Freon-22" at 0° F.

Hydrocarbon Refrigerants Used Extensively

The hydrocarbons ethane and ethylene are used extensively in the petro-chemical field for temperatures well below -100° F.

Due to high pressure characteristics at normal ambient temperatures they are cascaded with other refrigerants, generally other hydrocarbons such as propane, propylane, etc., to obtain reasonable pressure conditions at water condensing.

At present the hydrocarbons are the only practical means for obtaining temperatures much below -100° F. since "Freon-13" and "Freon-14" are still very expensive and not in use enough to have proven themselves.

In addition, the hydrocarbons depending on capacity required lend themselves to either reciprocating or centrifugal compressor applications.

Some of these refrigerants are used in direct cooling applications either in coils, or flooded or sprayed cooler cycles but normally, except for ammonia, direct expansion is confined to small tonnages, single coil, cooler, or small test chamber applications.

Most multiple low sides or large tonnage systems involve use of an indirect medium. Salt brines are not practical much below -35° F. Alcohols are used, though infrequently, so methylene chloride has assumed prominence as a brine.

Its advantages are: low viscosity at very low temperatures, it is not expensive, and it may be used for both cooling and heating medium where the same coils are used for heat as well as cold tests.

Trichlorethylene is also being used since its higher boiling point than methylene chloride of 188 at atmospheric pressure allows its use at higher temperatures on the heating cycle without requiring high pressure maintained on the brine cycle to prevent gas formation from the boiling at higher temperatures.

Another development is use of the turbine expander for securing low air temperatures for the large volumes of air required in jet engine tests. Here refrigeration is used to dry the air ahead of the expander to prevent ice crystals forming in the expander turbine.

The drawback to this system is lack of flexibility in capacity since any reduction in air flow to the expander affects the outlet temperature. However, in cases requiring large volumes of low temperature air, systems are sometimes arranged to actually bleed off and throw away the excess low temperature air when reduced capacities are needed.

Large Safety Factors Fine But Expensive

Michel then touched a bit on design and application problems. First, he took load calculation.

"Large safety factors are wonderful," he said, but in low temperature work they are quite expensive. Every possible load must be figured, insulation losses, pumping power, piping losses, even lighting and people loads assume large proportions on some jobs.

Some of these external losses which are minor in high temperature applications may even exceed the internal loads themselves, he noted. Often the pull down load far exceeds the load when the system is down to design conditions, and this must be carefully checked as it may thus become the basis for sizing equipment.

On small jobs of 5 tons or less at below -50° F., safety factors of 50% are used. Even on large systems safety factors of 15% to -40° F., and 25% below -40° F. are not too much.

Safety Margins Easily Wiped Out

We must keep in mind that on these systems, usually operating at very low pressures, oil contamination, non-condensibles in the system, as well as deviation of heat transfer equipment from design calculations and physical changes in installation from design layout can all wipe out what was thought to be ample safety margin in the load calculations.

Since pull down loads may exceed the load at design conditions this may be the basis for sizing and, where a brine such as methylene chloride is involved often the pull down of brine from ambient temperature may form a basis for design though normally time is available to keep this below design temperature conditions.

However, this pull down requires careful analysis of motor sizes since the compressor has much greater capacity at conditions higher than at design conditions and thus can be the basis for powering the compressor.

Incidentally, on the low pressure reciprocating compressors, the physical size is generally large while the gas compression power is quite low. Friction horsepower of these compressors quite often exceeds the power required for compression of the gas itself.

Low pressures are involved, thus static height in the evaporator may prove serious. For example, with "F-12" evaporating at -100° F. from the surface, a depth of 1 ft. of "F-12" would result in -94° F. at the bottom of the liquid and this effect on MTD can seriously affect surface calculations, and if a shell were 4 ft. or more in diameter this static height effect would truly be serious.

Pumps are sometimes used to recirculate the liquid through the coil or as spray over tubes of a shell and tube cooler to cut down the static height penalty.

Pressure Drop In Liquid Is Critical

Pressure drop in liquid as well as gas lines is critical.

Suction lines are always carefully sized for minimum pressure drop but if flash subcooling of the liquid is involved pressure drops in liquid lines can result is so much flash gas developed that friction drop is excessive and the low side can't be fed.

The best method of liquid subcooling is done with shell and tube or shell and coil coolers which maintain the liquid at high pressure, while allowing subcooling to within

(Concluded on next page)

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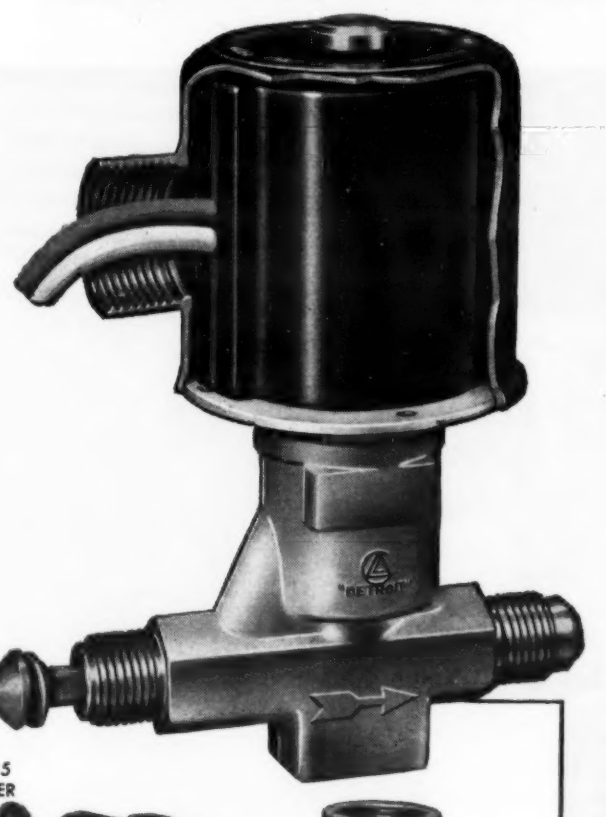

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Michel Gives Pointers on What Factors To Consider In Low Temperature Work

(Concluded from preceding page)

10° F. of the temperature corresponding to the intermediate pressure, thus the liquid is truly subcooled, and pressure drops in the lines, through valves, etc., do not cause flashing of the liquid.

Calculations of refrigerant charge on these low temperature cycles particularly where "Freons" are used is a serious consideration. The large piping, extra subcoolers, etc., can trap large quantities of refrigerant that can run up quite some added cost.

Oil Recovery Devices Are Essential

Because of oil contamination, oil recovery devices are essential. Centrifugals are ideal where they can be used since there is little or no carryover of oil to the low side as is the case with reciprocating units.

On flooded evaporators oil reclaiming devices are absolutely necessary to keep the low side as free of oil contamination as possible.

It is almost impossible to discuss all of the problems that crop up but one little point that can be disastrous involves use of check valves on discharge lines to condensers on centrifugal cycles.

The centrifugal has no valves so that on low temperature systems at shut down the pressure equalizes in the entire system immediately and this can result in freeze up of the condenser tubes.

Layout of a low temperature system may seem simple but the designer must have room. Piping layouts may seem easy until allowance for insulation is made. With six to eight or more inches of insulation a ½-in. line takes practically as much space as a 3-in. or 4-in. line and many low temperature systems give the appearance of shoe horn installation.

Extreme care must be taken in installation in checking leakage and particularly dehydrating. High vacuums must be pulled on the system and maintained for days to insure practically all moisture removal, for moisture in a system for low temperatures can prove costly.

A few extra days dehydrating can save many days after the plant is charged and operated if moisture is present to freeze up valves and controls.

Materials of Construction Controversial

Materials of construction provide one of the most controversal issues in design. The latest ASME Code provides for use of ordinary steels at low temperature if the pressure at design temperature is less than one fifth of design pressure.

Certain states, Ohio and Pennsylvania are two, do not recognize this latest interpretation, and thus require steels of various nickel contents for temperatures below -20° F.

Check the local codes carefully since there is a considerable cost difference between ordinary and nickel steels, not only for material but for X-rays, magnaflux, stress relieving, and sharpy tests necessary to meet code requirements.

Incidentally, it is wise to use suction heat exchangers (in fact a must) to prevent requirement of special materials at low temperature for compressors.

This is critical with reciprocating units. Exchangers, to insure a minimum of -40° F. at the compressor, are a must to minimize lubrication problems as well as save on special compressor construction.

No Need for 'Freon-12' Here

A commentary on Michel's paper by William L. Holladay, engineer for the Hieatt Engineering Co., regretted that more detail was not given to the "Freon" refrigerants, particularly "Freon-22."

Holladay wrote that he could see no need to use "Freon-12" on low temperature applications. The use of "Freon-22," he noted, permits the use of a compressor a size smaller than would be required with "Freon-12." This results in a price differential that is sometimes important.

To Lure Prospects . . .

SPRING HOPE, N. C. — Silver minnows stocked in the storage room at Western Auto Associate Store here serve as lures for both the fishermen who use them and the store itself. The convenience of the stock of bait attracts many local fishermen to the outlet, according to G. R. Moss, owner.

SCOOPING ICE CUBES out of the automatic ice maker at the Charleroi-Monessen hospital at Monessen, Pa. is a pleasant chore for this nurse who appreciates having ice readily at hand when she wants it and in the form she needs it.

Hospitals Want Automatic Ice Makers For Ice In Usable Form and at Hand

PITTSBURGH — Hospitals that have been equipped with ice plants requiring the services of two men full-time to manufacture, cut, and deliver ice, are putting in modern automatic ice makers, reports E. V. Tierney, sales manager, Ajax Co. of Pittsburgh.

A meter-payment proposition, says Tierney, showing specifically how the cash savings usually paid out to operate an ice plant can now pay for a modern ice machine installed at point-of-use, is making the new machines very attractive to hospitals.

Every hospital today has ice-making machinery, Tierney says, but hospitals are going from main ice plants to individual setups because with the latter: (1) one can have ice cubes just for walking down the hall, not 10 to 30 minutes from now, and (2) one can have ice in usable form immediately.

In hospitals, so ice may be where you want it when you want it, the new ice-making units generally are placed (1) handy to the diet kitchen and/or cafeteria for ice water; (2) on the surgical floor for cooling of the oxygen passing through the ice chamber at the prescribed temperature before it goes into the patient's hood.

Machine eliminates carrying ice through the hospital. In former methods, block ice was slid onto a steel ice cart with casters, the cart taken to the proper floor in the elevator, and then chipped up for ice packs.

University of Virginia Hospital in Charlotteville, Va. likes these features so well it has 11 machines, eliminating the need of carrying ice from floor-to-floor. Charleroi-Monessen hospital at Monessen, Pa.. has two machines.

The local Ajax Co. has an offer whereby hospitals paying probably $7 a week, $364 a year for ice, take a machine on trial. Hospital pays $45 a month to lease the machine. If their ice expenditures are $40 a month, they take that same $40, add $5, and rent the new machine for only $1.50 a day.

No order is made out, nor is there a sales contract. A lease agreement is all that's necessary. In 26 months the machine is paid for; purchaser is given a bill-of-sale for $1 and the machine is the property of the hospital.

50,000 Sq.Ft. of Warehouse Space Leased by Hotpoint

CHICAGO—Hotpoint, Inc. has announced that it has leased approximately 50,000 sq. ft. of warehouse space at 12100 S. Peoria St., here, near its Chicago Heights manufacturing facilities, so that production of commercial electric cooking equipment can be expanded to meet orders related to the nation's defense activity and increased needs of industry for mass-feeding facilities.

All warehousing, shipping, and crating activities are to be moved from the 200,000-sq. ft. Chicago Heights plant, put into operation following World War II, to the new location, Orrin E. Wolf, vice president, said.

Finished products will be trucked to the shipping warehouse during evening hours after each day's factory production.

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You'll also find that the 683 is a standout from the standpoint of adaptability—with three standard models available for flare, sweat or pipe thread connections, each equipped with a sturdy mounting boss to simplify installation. DETROIT Solenoids are available in capacities up to 20 tons Freon-12. So, for replacement or new installation, use DETROIT for true solenoid superiority! See your DETROIT wholesaler today—he'll give you complete information on Government regulations which provide a means of securing material for Maintenance, Repair and Operating supplies.

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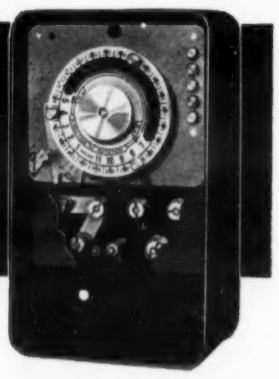

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Birds Eye Merchandising Policy

New General Foods Sales and Distribution Method Eliminates Exclusive Distributor Agreements, Uses Standard Marketing Principles

CHICAGO—A new sales and distribution policy for Birds Eye frozen foods which will, among other things, put an end to exclusive distributor agreements, has been put into effect by General Foods Corp.

The move was announced by Charles G. Mortimer, Jr., General Foods vice president, before the Super Market Institute at its annual convention here in the course of a talk prophesying even greater expansion of frozen food sales.

Money-back guarantee of quality and guarantee of sale for the retailer are features of the new policy, which Mortimer outlined as follows:

"Guarantee of product quality—All retail products of the Birds Eye Division of General Foods are produced to the highest standards of quality and consumer satisfaction. Raw material selection, processing, and packing controls insure uniform quality, cleanliness, and average package weights meeting U. S. Food & Drug Administration standards. Directions for home use are tested to assure the most reliable and satisfactory results in consumer usage. The Birds Eye Division will replace or refund the purchase price of any item found to be unsalable because of any fault in production, and so on.

"Guarantee of sale—All retail products sold by the Birds Eye Division carry a firm guarantee of consumer resale. We will refund the purchase price of any unsalable item which has been offered to the consumer under normal conditions of availability and price for a reasonable period of time.

"Prices and allowances—All retail products of the Birds Eye Division are sold to approved direct buyers at list prices published for the established Birds Eye trading areas. Effective prices are those in force on the date of receipt of the customer's order. Prices are subject to change without notice. No special discounts or allowances of any kind, including promotion and advertising allowances, are available to any buyer.

"Distribution objectives and policy—The Birds Eye distribution objectives in every market are as follows:

"1. *Retail:* To satisfy consumer demand for Birds Eye products (through continued availability in a high proportion of the retail frozen food outlets) in representative variety . . . in adequate quantities to support optimum turnover . . . and at effective consumer prices yielding acceptable retail profit margins.

"2. *Direct Accounts:* To develop and service retail outlets for Birds Eye products, (through selective recognition of those direct buyers whose facilities, services, and operating policies will contribute substantially to the above retail distribution objectives) at effective resale prices yielding acceptable distribution profit margins.

"To achieve these objectives, the Birds Eye Division's national distribution policy is as follows:

"1. Upon the determination of existing wholesale buyer agreements, we shall enter into no exclusive or restrictive selling agreements with any customer.

"2. We shall continue to service any market through a single direct buying distributor so long as we think he can satisfactorily achieve the above Birds Eye retail distribution objectives.

"3. When a review of the distribution situation in any market served by a single distributor reveals that our joint efforts can no longer satisfactorily achieve the above retail distribution objectives, we shall notify the single distributor of our intention to sell and shall sell, other direct buyers who qualify under our stated customer recognition policy.

"Customer recognition—Certain qualifications have been established for direct buyer recognition on Birds Eye products. In addition to normal definitions, credit policies, and standard practices, the Birds Eye customer recognition policy defines certain storage and delivery facilities required for protection and safe handling of frozen foods. These requirements may be examined in full by any customer so desiring."

Mortimer went on to explain:

"Although we believe it wise and sound to withdraw from selling Birds Eye through exclusive distributor agreements, we do not by any means believe it wise and sound for every possible customer to buy direct.

A Specialized Business

"There's a lot of know-how required in the distribution of frozen foods. Their handling at consistently low temperatures from carload to warehouse, to truck, to store, to cabinet, to consumer calls for special facilities and special experience. And that particular period in the movement of a frozen food product is the most critical period—the time when mishandling at any step may destroy the very quality and value that freezing has brought to the product.

"The distributing organizations that have handled frozen foods for years have provided the facilities, and acquired the experience necessary, to protect these perishables (for paradoxically, frozen foods *are* perishable) and they can supply their facilities and knowledge to customers at increasingly reasonable costs.

"That's why it continues to be our policy to service any market through a single distributor, so long as he can achieve our retail distribution objectives. That's also why, even when a single distributor can no longer achieve those objectives, we shall exercise selective recognition of direct accounts that can qualify in terms of proper facilities to service, handle, and protect frozen foods.

Trading on Experience

"Having been in frozen foods longer than any other processors, we've tried harder and so erred more than the rest. We now think we see the emergence of those principles of marketing that will govern the growth of the industry in future years, and contribute to its increasing stability and profitability for all of us.

"It may come as no surprise to you that those principles are basically the same, unchanging principles that have been tested and proved in the merchandising of dry groceries (and by 'dry groceries' I mean produce, meats, and all food products other than frozen ones). The principles are not new at all, except as their application is relatively new in frozen foods. You won't be startled to learn that as to frozen foods we hold:

Five Aims of Birds Eye

"1. The product must provide a consistently high and reliable quality and convenience.

"2. The price must represent a recognizable and acceptable consumer value.

"3. Advertising and promotion must continually broaden and deepen consumer demand.

"4. Distribution must insure wide and continuous availability to the consumer.

"5. The grower, the processor, and the distributor must each make a profit as a reward for his work and his risk.

"Nothing could be much simpler, more fundamental, or, as regards frozen foods, more in need of better understanding.

"We in the Birds Eye Division of General Foods believe it is one of our responsibilities as leaders in the industry to apply those principles as a matter of unvarying policy in the conduct of our business. To meet the requirements of the fast changing system of distribution, which has expanded with the growth of supermarkets, we recently redrafted our policy and have spelled it in writing for our organization and all those who deal with us."

Another Record Pack

More Frozen Vegetables, Fruits, Berries Packed In 1950 Than Any Other Year

CHICAGO — More frozen fruits, berries, and vegetables were packed in 1950 than in any preceding year.

The 1950 pack statistics bulletins of the National Association of Frozen Food Packers, released recently, indicate an over-all pack of 1,059 million lbs. of frozen fruits, berries, and vegetables, and more than 28 million gallons of frozen concentrated citrus juices.

The citrus concentrate total was about 2⅓ times as great as the preceding year, while the fruit and vegetable total was up 15%. Prior to 1950, the largest fruit and vegetable pack was in 1946, when the total was 969 million pounds. Production in 1950 was 9% above that level.

The 1950 frozen vegetable pack of 587 million lbs. established a new record high. While this total was only 4% above 1949 production, 1950 was the third consecutive year that frozen vegetable production showed an increase above the preceding year.

The increase in pack in 1950 resulted from substantial increases in the packs of a few items such as green peas and snap beans which more than offset moderate reductions in the packs of several other products.

The 1950 frozen fruit and berry pack, amounting to 472 million lbs., was one-third greater than the 1949 total, and was the second largest pack on record. It was exceeded only by the 1946 pack, when the total was 519 million lbs.

The big gain in volume in 1950 is attributed primarily to great increases in the packs of frozen strawberries, frozen R.S.P. Cherries, and grapes and pulp. Most other packs were smaller than or about equal to 1949 totals.

Container sizes used for frozen fruits and berries were not much different in 1950 than in the preceding year. Retail sizes again accounted for some 20% of the total, and sizes ranging from 2½ through 10 pounds still represented only about 2% of the total pack. Among the large institutional and industrial sizes, the use of the 30 pound size increased, while the barrel pack represented a significantly smaller percentage of the total than in prior years.

All regions participated in the increased pack of frozen fruits in 1950. Some regions, however, gained relative to others. The pack in the Northeast represented a slightly greater percentage of the total than in 1949. In both the South and the Midwest, the percentage of the total was much greater than last year, while the proportion of the pack produced in the West declined. Production in the West, however, continued to represent a far greater percentage of the total pack than other regions.

$100 Frozen Food Prize Creates Interest In Home Freezer Sales

JAMESTOWN, N. Y.—Jamestown Refrigeration Sales, Inc. here, created considerable interest in home freezers and frozen foods by giving away $100 worth of frozen foods during the recent Homemaker's Exhibit at the State Armory.

The firm had a special exhibit at the three-day show, emphasizing frozen foods. Newspaper advertising was employed to suggest that homemakers visit the exhibit and get an opportunity to win the $100 frozen food prize.

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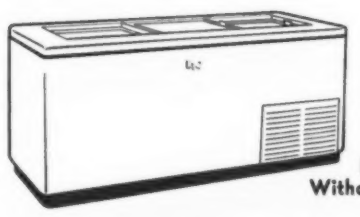
With superstructure and colorful, 3-dimensional pictures.

You'll find big-case capacity built into the compact frame of Brewer-Titchener's DC-16 Display Case. Little wonder that this smartly-styled cabinet is among the most popular in the BTC line!

SO MUCH STORAGE SPACE 16 cubic feet of storage in a floor area only 76" by 28" — thanks to BTC's new vapor-sealed insulation!

SO SMART LOOKING TOO Trim lines, gleaming-white finish and stainless steel capping make it an outstanding attention winner!

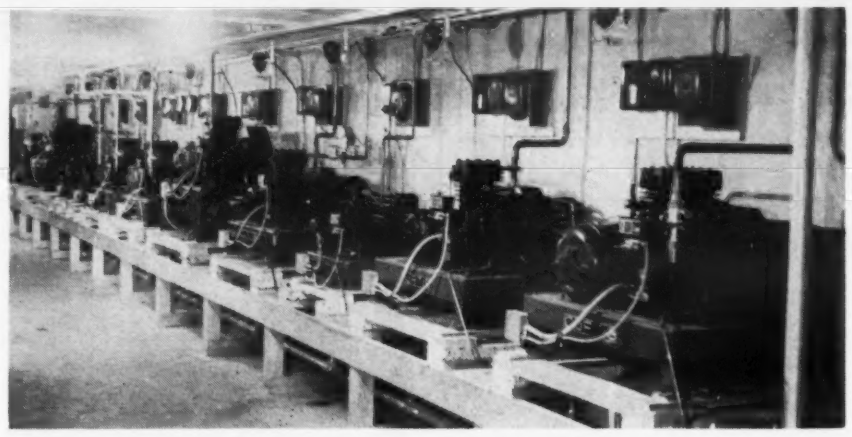
Brewer-Titchener's DC-16 offers all these wonderful features too — all-steel Bonderized cabinet, three Thermopane rolling glass lids, ⅓ H.P. hermetic compressor, as well as a 5-year compressor and 2-year food spoilage warranty. Learn the full story on handling this profitable display case by writing Brewer-Titchener today!



MODEL DC-16-3
Without superstructure.

THE BREWER-TITCHENER CORPORATION
Binghamton • New York

KRAMER TRENTON CO. Trenton 5, N. J.



LEFT: Weighing, pre-wrapping, and pricing of meat merchandise for self-service meat department. Operation is visible from the store. After meat is weighed, wrapped, and priced it is placed on conveyor and carried to package holding cooler. A Curtis 7½-ton air conditioning unit, with a 55° controlled temperature, is used here.

ABOVE: Compressor room houses 11 Curtis water-cooled condensing units from ½ to 3 hp. Disconnect switches and clock controls are shown above each unit for defrosting of the equipment.

Supermarket Is Super Salesman

New Kroger Store Not Only Makes Shopping Easy for the Customer, But a Pleasure as Well

NORMANDY, Mo.—When Kroger Co. opened its newest store here last winter, the conservative citizens of this quiet little St. Louis suburb reacted in much the same manner as Hollywood residents attending a movie premiere.

Despite near-zero weather, hundreds of people were queued all around the store when employes reported for duty; hundreds more arrived by bus and private car until soon the parking lot and sidewalk were filled. Normandy police were called to keep the eager throng in some semblance of order.

Store employes were hastily dispatched with steaming containers of hot coffee and sacks of doughnuts for the doughty visitors holding the line outside. Inside, stock men and clerks began a record job of keeping shelves filled as every visitor turned into a quantity purchaser. It became a race of supply and demand—and in the months that have followed, this pace has seldom let up.

The reason is simple: this is an ultra-modern supermarket where shopping has not only been made easy—but is a downright pleasure. It's a really delightful place to visit.

With summer, Kroger's foresight in a complete refrigeration and air conditioning system is paying off in even greater-than-expected dividends.

In the store proper, are four Curtis 7½-ton packaged air conditioners; a fifth Curtis 7½-ton conditioner maintains a low 55° controlled temperature in the store's advanced design pre-wrapping meat department.

The compressor room houses 11 Curtis water-cooled condensing units, ranging from ½ to 3 hp. in size.

Set up at intervals in the market area, the four package air conditioners serving the store proper were painted at the top to match the wall. The units were located to ensure cooling would reach the patrons lined up at the check-outs.

Nine check-outs are provided in the store, each being of the conveyor belt type. A foot switch controls the operation of the belts.

Installation of the package unit in the meat weighing and packaging room, which is held at 55° F. helps preserve the meat and keeps merchandise from sweating. Six wrappers and one weigher are employed. After the meat is weighed, wrapped, and priced, it is placed on a conveyor and carried to the package holding cooler.

The 11 Curtis compressors handling the cases and coolers are mounted in a row on a wooden framework in a compressor room. Corkboard is sandwiched between the compressor bases and the wooden frame to deaden vibration and noise.

Disconnect switches and clock controls for defrosting the equipment are mounted on the wall behind the units. Directly overhead are fire bombs above each compressor.

Served by these condensing units are a 36-ft. produce rack, a walk-in beverage cooler, 14 ft. of frozen food cases, a medium produce cooler, a 65-ft. run of meat cases, a large meat cooler, a cheese storage cooler, the pre-package cooler, and a 30-ft. line-up of dairy cases.

Economy Appl. Center Opens

SYRACUSE, N. Y.—Economy Appliance Center has opened its newly enlarged store at 1107 Wolf St.

WHY WAIT?
Get your new product info pronto. Use coupon on "What's New" page this issue. Use Key No. for fastest service.

for all tubing or pipe
Handy Tube Bender

Sizes To Bend ⅜" O. D. to 1⅛" O. D.
NO KINKS OR FLATS
PORTABLE
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Prompt shipment!
74 different models in stock
FACTORY DISTRIBUTORS
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EXPANSION VALVES
SOLENOID VALVES, ALL TYPES
REF. FITTINGS and PARTS
ANY QUANTITIES • MUST BE NEW
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455 W. 19 St., N. Y. 19, WAtkins 4-4302
(Send for Traco's complete list of sensational bargains)

KEEP REFRIGERANTS dry and clean
WITH MUELLER BRASS CO. DELUXE DRIERS
Extra-capacity cone-screen filter unequalled for efficiency in the refrigeration industry.

FORGED BRASS ENDS
Heavy duty type with husky wrench flats.
INLET CONTAINER SCREEN
Positive desiccant retainer without pressure drop.
DRYING AGENT
Installed under strict laboratory control with sealed charging equipment.
LOCKED-IN CONE OUTLET SCREEN
Extra capacity free flow strainer surface
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Chemically cleaned wool mass traps fine metallic grit or other foreign particles.
The millions of Mueller Brass Co. Deluxe Driers that are now in service provide the kind of proof you want—proof that no other drier can approach for all-around efficiency on-the-job, and for good reason. The Mueller Brass Co. Deluxe Drier is a typical example of the dependability and quality that Mueller laboratory and development engineers have made available in so much refrigeration equipment. The famous cone screen filter greatly increases the Deluxe Driers' working life. The filter strainer unit of the Deluxe Drier removes every minute particle of foreign matter from the line—keeping the refrigerant completely clean as well as dry.
Order now from your refrigeration wholesaler.
Have these STREAMLINE products on hand for every job where you want dependable performance.

COPPER FITTINGS
VALVES
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63A LIQUID INDICATORS

Write for catalog R-151 describing complete line of STREAMLINE refrigeration products.
STREAMLINE refrigeration products are individual and multiple packaged for complete protection.
MUELLER BRASS CO. PORT HURON 10, MICHIGAN

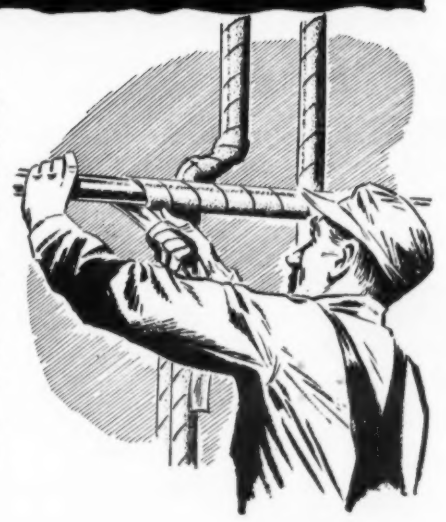
What the serviceman should know about "VIRGINIA" REFRIGERATION products

"EXTRA DRY ESOTOO"
(B.P. +14°F.)
"Extra Dry" is the refrigeration grade SO_2 that service and maintenance engineers have endorsed for more than 20 years. Comes in all popular cylinder sizes.

"V-METH-L" (B.P. —10.7°F.)
Virginia Methyl Chloride is made specifically for refrigeration use. Low moisture content, low acidity and narrow boiling range recommend "V-Meth-L" for the most exacting requirements.

"FREON" REFRIGERANTS
"FREON-113" Boiling Point 117.6°F.
"FREON-114" Boiling Point 38.0°F.
"FREON-11" Boiling Point 74.7°F.
"FREON-12" Boiling Point —21.6°F.
"FREON-22" Boiling Point —41.4°F.
Virginia Smelting Company is distributor for "Kinetic" Chemicals "Freon" Refrigerants.

TO CHARGE A SYSTEM, USE REFRIGERANTS THAT ARE CONSISTENTLY PURE, CONSISTENTLY SURE

STOP THAT DRIP with PRESSTITE INSULATION TAPE
Now you can stop that constant drip of suction lines, circulating cold water pipes, valves and fittings—stop it once and for all with Presstite Insulation Tape. It quickly and effectively insulates against condensation, and it's so easy to use anybody can apply it. Presstite Tape comes in rolls 2" wide and ⅛" thick. It contains 40 percent virgin cork and will adhere to any metal surface. Wrappings can be built up to any thickness desired. Joints are self-sealing. No cements or other wrappings are needed. The convenient package contains 30 lineal feet. Stop customer dissatisfaction before it can start—use Presstite Tape on all new and reconditioned installations.


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ASK YOUR WHOLESALER OR WRITE
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WEST NORFOLK, VIRGINIA
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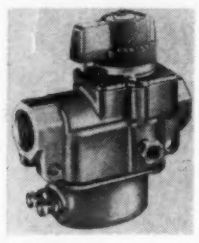
What's New

When requesting further information on new products, please use "Information Center" form.

General Controls Safety Valve Features Small Size

——KEY NO. A-640——

GLENDALE, Calif. — What is claimed to be the smallest combination safety and plug valve in the gas appliance field is the MR-5 gas cock safety valve recently introduced by General Controls Co. here.



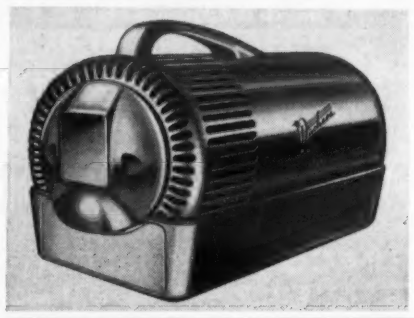
Its small size is a distinct advantage in making up manifold structures, the company declared.

Most important feature of the valve is its "fail-safe" operation. Being a pilot safety valve, the MR-5 "fails" to the "safe" side in the event of pilot flame failure, the company explained.

The MR-5 is principally a safety shut-off valve, consisting of a thermocouple safety incorporated into a hi-flow gas cock valve structure. By virtue of its "safe lighting" design, no gas is allowed to pass into the main burner, according to the company.

The valve, which can also serve as a manual shut-off valve, is available in pipe sizes ranging from ⅜ to ¾ in. It can be used in either single couple or pilot generator installations.

Appliance Mfg. Announces Duchess Portable Air Drier

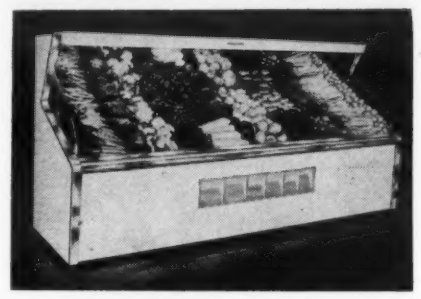


——KEY NO. A-641——

ALLIANCE, Ohio—The Appliance Mfg. Co., here announces a new, portable Duchess air drier for removing excess humidity from the air. Easily portable, it will remove under high humidity conditions, approximately 10 qts. of water from the air in 24 hours.

The unit carries a five-year factory warranty, and is priced at $129.95 list.

McCray Display Produce Case Has Big Volume



——KEY NO. A-642——

KENDALLVILLE, Ind.—A single duty, big volume, high angle display produce case, known as model GY-11S has been announced by the McCray Refrigerator Co. here.

Length of the case without ends is 131⅝ in.; with ends 138⅛ in. Depth is 46 in.; with ends 46⅜ in. Height is 73¼ in.

Seven shelf positions are possible in the display compartment, permitting either deep volume display for heavy shopping traffic, or shallow display for lighter shopping periods.

The display area with shelves in uppermost position is 33 sq. ft. Display volume with shelves in lowest position, 42.5 cu. ft. An optional 4 in. glass front may be added across the front of the display compartment if the customer so desires, for a maximum display volume of 47.5 cu. ft. capacity.

The GY-11S was designed to give continuous high angle mass display at an easily accessible reach-in level. The 26 in. electro-copper plated mirror, having a five-year guarantee against silver deterioration, is placed at the proper angle to give the appearance of full mass display effect without a break in the display at the point where the mirror joins the produce section.

The canopy of the superstructure is finished in baked enamel. The exterior front panel is white porcelain. The detachable black porcelain base panel conceals the service connections in the recessed toe space below.

A 3½ in. half-round stainless steel rail across the front, above the porcelain panel, provides trim and at the same time protects the case from damage by shopping carts.

The ends of the case are white baked enamel protected by stainless steel caps. A ⅜ in. plate glass forms the ends of the display compartment. Centered in the front panel below the display section are six compartments for an assortment of paper bags up to size No. 16.

The display compartment is fitted with removable, telescoping perforated shelf sections. Two shelf supports at the front and four at the back permit the seven shelf positions.

Three black porcelain dividers are furnished—more dividers are available as extras. Black porcelain panels form the floor of the display section.

The case liner is one-piece white baked enamel having smooth interior corners. A large drain trap and drain line aid in cleaning the case interior. The case may also be drained at the rear.

Full length high level illumination of the case is accomplished with two white fluorescent lamps in the superstructure. The case is insulated with 3 in. of Fiberglas. Refrigeration is by means of the McCray Koldflo multi-finned evaporator coil.

Extra accessories available for the case include the McCray 4-in-1 price tag molding for attaching to the upper edge of the mirror; a spray attachment consisting of a water cooling coil and hand valve; and an 8 ft. flexible hose and spray nozzle.

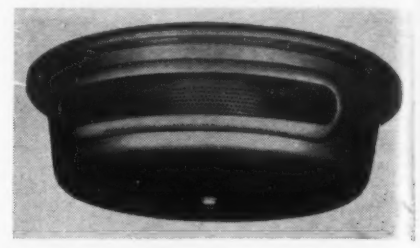
Bonney Forge Has New Slot-Head Screw Starter

——KEY NO. A-644——

ALLENTOWN, Pa.—The problem of starting screws in hard-to-get-at places is simplified by Bonney Forge & Tool Works' new slot-head screw starters.

"Every mechanic has experienced the problem of having screws fall into places where they could not be readily retrieved," the company said. "This new tool provides a patented gripping head which holds the screws firmly for starting. The screw is readily released by merely turning the handle."

The tool is available with metal and nylon handles.



Connor Diffuser Handles Air at High Pressure

——KEY NO. A-645——

NEW YORK CITY—The new Knox Draft type HPC II high pressure air diffuser is described in Bulletin K-26 published by the W. B. Connor Engineering Corp. here.

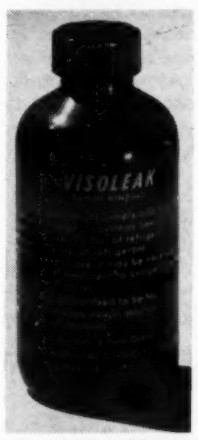
Performance data, drawings, and installation views are shown. This diffuser handles air at high pressures and high velocities, permitting the use of unusually small, exposed ducts of uniform size.

A smaller volume of air at low temperature provides the cooling effect ordinarily requiring a greater amount of air at a higher temperature, the company says.

Leak Detector Fluid Now Comes In Plastic Bottle

——KEY NO. A-646——

CHICAGO—To reduce breakage loss in manufacture and provide refrigeration servicemen with accidentproof containers, Allin Mfg. Co. here, has adopted Plaxpak polyethylene bottles as holders for Visoleak, a fluid used to detect leaks in refrigerating systems.



Allin says plastic bottles give assurance to customers that Visoleak will not be lost due to handling accidents. On service calls, maintenance men can throw Visoleak bottles into tool kits or drop them while working on a system without fear of breakage.

Visoleak is available in 4-oz. bottles.

International acceptance!

Thousands of ACE low temp cabinets in use throughout the world

WORLD-WIDE acceptance of ACE equipment was not accomplished overnight. This took years. We built our cabinets with the full confidence that they would do the selling job for you. The name "ACE", is a respected brand, internationally recognized as THE cabinet that represents all 6 vital factors that make for a perfect unit . . . 1—design, 2—styling, 3—engineering, 4—construction, 5—performance, 6—price.

Literature of the complete ACE line is available on request.

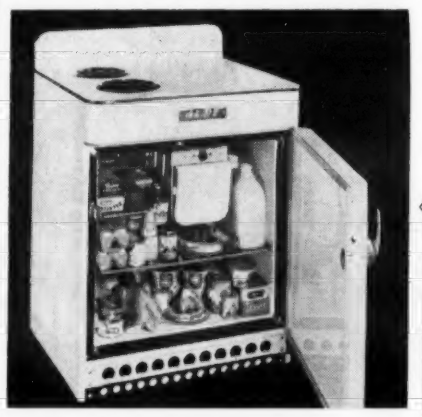
Ace Cabinet Corp.

New Bedford, Mass.

Please address all inquiries to: Exec. Sales Office: 1457 Broadway • New York 18, N. Y.

Export Dept.: 39 Broadway, New York 6, N. Y.

Manufacturers of Frozen Food Display Cabinets, Ice Cream Dispensing Cabinets, Farm Freezers and Bobtails.



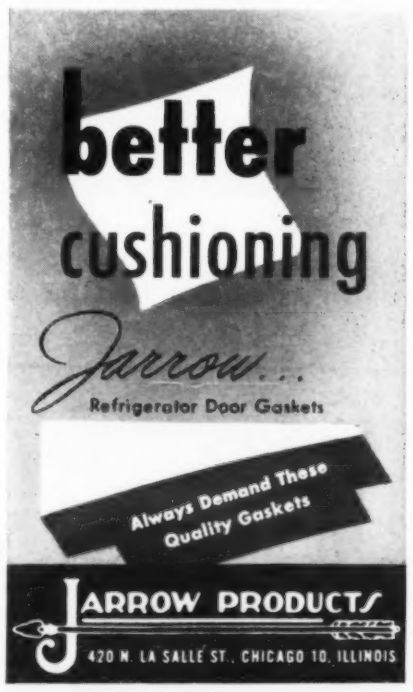
Acme Shows Dual-Purpose Refrigerator, Range

——KEY NO. A-643——

LONG ISLAND CITY, N. Y.—Acme-National Refrigeration Co. here has just introduced a new combination refrigerator and electric range, known as the Acme Dual-Purpose.

This unit combines all the advantages of a compact refrigerator and the convenience of a two-burner electric range all in one unit.

This Dual-Purpose unit is 36 in. high, 27 in. wide, and 26½ in. deep, with 5.8-cu. ft. capacity.



Information Center

For *more information* on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

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What's New (Cont.)

UsAirco Redesigns Window Type Air Conditioner

——KEY NO. A-647——

MINNEAPOLIS—A re-engineered and redesigned window type room air conditioner has been announced by United States Air Conditioning Corp. here.

The company reported that new features of its 1952 models include all-weather exhaust, distinctive cabinet, easy change of filters, and fully-sealed hermetic refrigeration system.

Housed in a streamlined cabinet, finished in a neutral tone of hammerloid enamel to blend with any room decoration, the new units have been designed for high operating efficiency and low noise level, according to the company.

The exhaust feature provides a manual control on the top of the cabinet for regulation of an exhaust damper which will remove air from the room to the outside. It functions independently of the cooling section of the unit and can be used equally well in cold weather to exhaust stale or smoky room air, the company said.

The new units are available in ½ and ¾-hp. models, the smaller of which is recommended for use in rooms 200 to 300 sq. ft. in area, while the ¾-hp. model is designed for rooms with 300 to 450 sq. ft. of floor space.

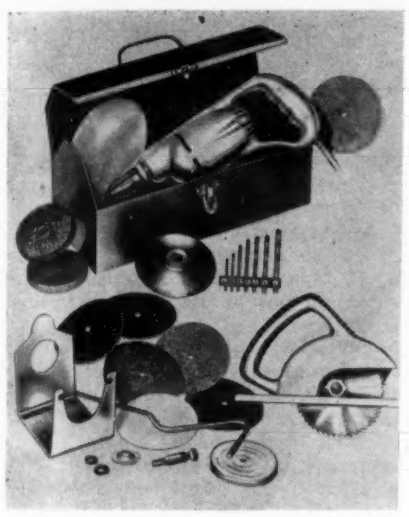
Adjustable louvers provide four-way directional control of air circulation.

In addition to the standard one-year warranty on the entire unit, the manufacturer provides a five-year warranty on the unit's compressor. Under the terms of this warranty, UsAirco will replace faulty compressor parts, pay all shipping charges, and a fixed fee for installation of compressor replacement parts during the five year period.

The manufacturer further provides scheduled repair allowance for replacement of other components during a one-year period.

Kapner Introduces Portable Electric Power Kit

——KEY NO. A-648——



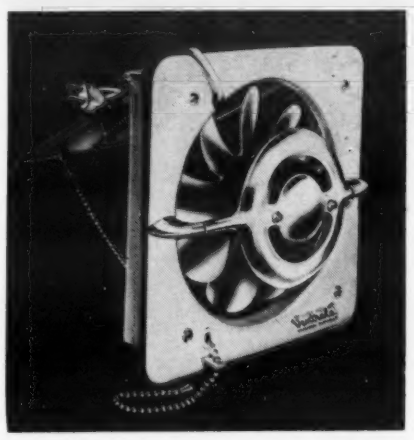
Kapner tool kit

NEW YORK CITY — A portable electric power tool kit that provides all necessary devices for workbench or maintenance call has been introduced by Kapner Hardware, Inc. here.

Every device for drilling in metal or wood, polishing, buffing, sanding, wood cutting, or liquid mixing is included in the outfit, all fitting into a steel carrying case.

The kit consists of a ¼-in. electric drill for 115 volts a.c., a 4-in. portable electric saw attachment, a 4-in. saw blade, lambs wool bonnet, six sanding disks, seven assorted drills, steel arbor and attachments, cloth buffing wheel, grinding wheel, wire wheel brush, steel paint mixer, steel bench stand, and a carrying case.

The kit retails for $26.95 and may be purchased either from industrial supply stores or the manufacturer.



Ventilator Exhausts Moist Air from Utility Rooms

——KEY NO. A-649——

DETROIT—A small utility ventilator primarily designed to remove from basements and utility rooms the excess moisture caused by automatic laundry equipment has been introduced by the National Appliance Co. here.

Called the Ventrola utility ventilator model 80, the unit will fit a window opening of 10¾ in. by 9⁵⁄₁₆ in. The one-piece, nine-blade, rustproof fan has a capacity of more than 500 c.f.m. It is powered by an induction-type motor using 60 cycle, 110 volt a.c. The motor is fully enclosed, noiseless, and shielded to prevent radio or television interference.

The ventilator features a chrome grille, white porcelain-type enamel face plate, and a rust preventing aluminum finish on all exposed parts.

Ace Adds Frozen Food Merchandiser to Line

——KEY NO. A-6410——

NEW YORK CITY—A small, low-temperature frozen food merchandiser with an 11.28-cu. ft. capacity has been added to the Ace line by the Ace Cabinet Corp. here.

Designated the model TO-12, the unit is completely self-contained and has a heavy-duty, hermetically-sealed condensing unit of ⅓-hp. capacity that glides out for cleaning or servicing.

Additional high level refrigerated surface is incorporated under the superstructure to assure uniform low temperature throughout, the company said. The superstructure is equipped with full-color, three-dimensional pictures illuminated by concealed fluorescent lights. Product strips are included.

Cabinet dimensions are 53³⁄₁₆ in. long by 30¼ in. wide, and 58 in. high.

for more Ice Maker SALES
. . . FILTRINE "Taste-Master" Demineralizer in the water line

Cuts Service
No Tastes
Clear Ice
Fits All Makes
Small Cost

Crystal ice . . . without sludge-forming rust, sediment, mineral residue . . . chlorine taste . . . "milkiness." Ends major source of service calls. Write for new literature.

Filtrine
"Water Coolers and Filters for 40 Years"
FILTRINE MANUFACTURING CO.
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Immediate Delivery
GUARANTEED ON OUR
AUTOMATIC ICE CUBER
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2524 27th Avenue South, Minneapolis, Minnesota

Now 3 ROOMS WITH 3 DIFFERENT TEMPERATURES in ONE!
• ECONOMICAL
• PRACTICAL
• ADVANCE DESIGN

NOW . . . the manufacturers of famous 'Kold-Draft products present the
*UNIFLOW Walk-in Coolers
• Standard Temperature Coolers
• Multi-Temp Coolers
• Walk-In Freezers

A Sectional Walk-in Cooler for Every Requirement

Two or three rooms with two or three *different* temperatures from —10° to +40°; or whatever temperatures your customer needs!

UNIFLOW'S Multi-Temp Walk-in Cooler is practical and economical to install and operate. It requires only one condensing unit, one blower unit, one expansion valve . . . and one refrigeration hookup.

The UNIFLOW line offers a truly *generous* value for every customer requirement. Write, wire or phone today for circulars, prices and dealer profit information.

* Trademark Reg. U. S. Pat. Off.

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UNIVERSAL COOLER CONDENSING UNITS
2 The Sign of DEPENDABLE CONDENSING UNITS AND REPLACEMENT PARTS

A COMPLETE LINE
The completeness of the Universal Cooler line (unmatched in the industry in sizes through 15 H.P.) is another advantage awaiting you wherever you see the Universal Cooler sign displayed across the nation. There is a type and size for the unusual applications as well as a wide selection of sizes for standard jobs.

A DEPENDABLE PRODUCT
Wide customer acceptance and Universal Cooler's good name in the industry are evidence of the dependability of products sold under the Universal Cooler name. Top quality condensing units are for sale wherever you see the Universal Cooler sign.

REPLACEMENT PARTS IN STOCK
Universal Cooler and its authorized wholesalers both recognize the importance of keeping replacement parts readily available for use in field servicing. Wherever you see the Universal Cooler sign, genuine Universal Cooler replacement parts are carried in stock.

A RELIABLE WHOLESALER
Wherever you see the Universal Cooler sign, you will find an experienced, reliable wholesaler, prepared to furnish responsible, competent attention to your needs. He and Universal Cooler work together closely to furnish unsurpassed products and services in his community. Look to him with confidence for Universal Cooler condensing units and genuine replacement parts.

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TAKE ADVANTAGE
of
DEVALUATION

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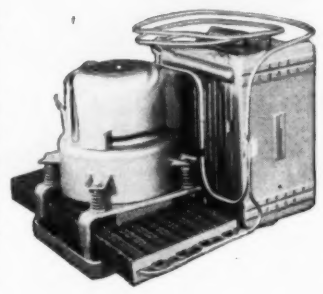
ALL VOLTAGES

THE LECOMETIC



THE BEST

Now available for the trade at keen prices either with body and starting relay only or complete, ready for immediate installation as depicted above, the "LECOMETIC" suitable for ambient temperatures up to 110° F.

We can offer standard open type condensing units. Also the LEC range of domestic cabinets.

ARN SALES DEPT.
LONGFORD ENGINEERING CO., LTD.
BOGNOR REGIS ENGLAND
Telegram: Longworks Bognor

MISSING SOMETHING?
More and better useful information is yours for the asking. See "What's New" page.
Use Key No. for fastest service.

EACH LOCKER UNIT in Frigidaire Midget plants is numbered and is equipped with its own lock. Users can come and go as they desire. Individual lockers have a capacity to store about 250 lbs. of frozen food making it possible for one unit to serve an entire family.

Midget Locker Plants

Multiple Chest-Type Freezers Serve as Individual Lockers In Northern Europe

COPENHAGEN, Denmark—Springing up like mushrooms across this northern European country is something new in the way of communal frozen food storage facilities—the Frigidaire "midget" locker plant.

A "vest pocket" edition of the larger conventional type plants, this new miniature version is comprised of a series of horizontal chest-type low temperature cabinet units, refrigerated like so many ice cream cabinets by a remotely located Frigidaire compressor. The midget plants have normal room temperatures with all low-temperature cold contained in individual freezing compartments.

Standard installations range from six to 48 individual "lockers." However, more can be added if desired. Individual lockers have a capacity for storing about 250 lbs. of frozen food, making it possible for one unit to serve an average sized family with a variety of meats, fish, poultry, fruits, and vegetables over lengthy periods.

The individual lockers are mounted side by side in double or single rows. Each has its own lid, which is secured by a lock. A special "Frigi-Term" system is built around each lid in the top frame, preventing the collection of dew or sweating, and eliminates the danger of the lids freezing shut. Each row of lockers are set into a brick-and-mortar foundation. Beneath the lockers is a layer of insulating hollow tiles forming dead air space between the bottom of the insulated lockers and their foundation to prevent "frost heaving."

Vacuum cold plates are used in all Frigidaire Midget locker plants. These maintain a temperature of -28° to -30° F. Air temperatures inside the storage compartments are said to be maintained at between -15° and -18° F.

A Frigidaire reciprocating compressor provides refrigeration for the lockers. The installation is especially neat and orderly. Above the compressor proper is a complete panel holding all of the necessary valves, controls, and other equipment such as oil separator, strainer, valves, and gauges. Thus, a quick glance will reveal whether or not the equipment is working properly. The various lines are painted in different colors to speed up identification in event servicing becomes necessary.

The locker owner prepares his own products for freezing and is free to come and go as he pleases. Because the locker room, itself, is maintained at normal temperature, it is not necessary to don heavy clothing. All lockers are numbered and corresponding keys are issued to the users.

The Midget locker plant has a number of other important advantages. It is extremely economical to maintain. Because the Frigidaire refrigerating equipment is completely automatic, and because each locker owner has his own key to the establishment, little or no direct supervision is necessary. Moreover, the buildings housing the plants are exceedingly economical to erect, requiring only basically sound architectural knowledge and simple construction work. Many are being constructed of brick, with tile roofs, although a frame structure will suffice. They can also be easily installed in existing buildings.

These small plants are so located that they serve the people in each community surrounding the plant. This community service factor has a tendency to limit the total number of families which each plant serves and thus reduces the total number of lockers in each installation.

Best Features of Both

Dept. Store Combines Service, Self-Service In Remodeled Market

ROCHESTER, N. Y.—Hundreds of feet of new refrigerated cases have been installed in the newly remodeled and expanded Food Center of Sibley, Lindsay & Curr department store.

The market now employs the best features of the service and self-service types of food store operation, using refrigeration extensively for both the display as well as preservation of a wide variety of food lines.

The Food Center is located in the heart of downtown Rochester and draws steady traffic from both shoppers and office workers in the area.

Entering the new Food Center, the customer first comes upon a new delicatessen section where a wide variety of freshly prepared foods are offered.

These foods are prepared in the Sibley restaurant on the sixth floor of the department store and require refrigeration to keep them fresh.

To the left is the new dairy department which has 30 ft. of refrigerated service cases and 13 ft. of refrigerated self-service cases for cheese products. Sibley's carries one of the most complete assortments of cheese in western New York and refrigeration is essential to this operation.

The new meat department, located at the rear of the store, features both service and self-service through refrigerated cases. Seventy feet of cases are of the service variety and this section of the department is manned by meat-cutters who wait on customers.

Twenty-eight feet of cases comprise the self-service section of the meat department where customers in a hurry may make quick selections easily.

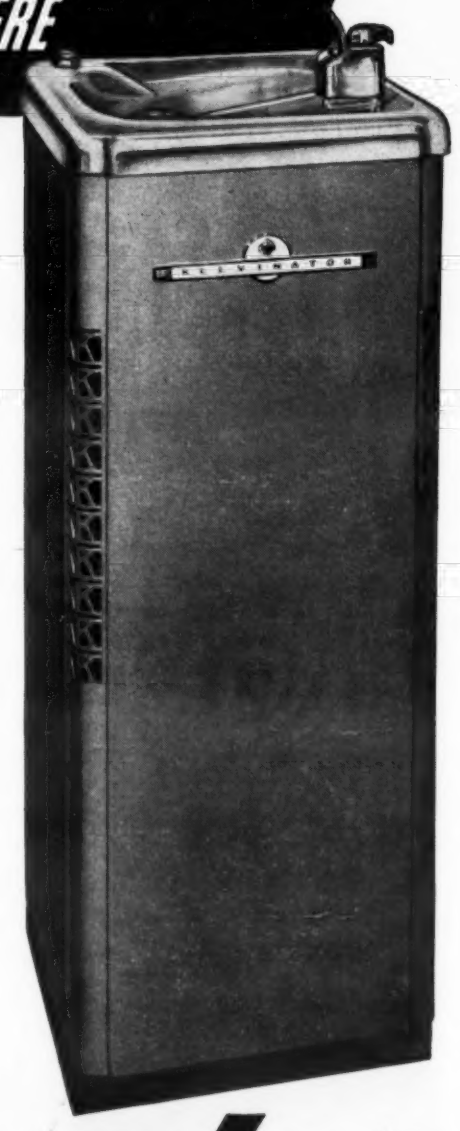
The store does not carry a full line of meats in the self-service section but tries to feature the most desirable items.

Other departments employing refrigerated cases include frozen foods and ice cream. These are self-service operations.

Keep Cool while selling coolers
—do it the easy way!

SELL THE NAME FAMOUS IN REFRIGERATION—

The KELVINATOR Water Cooler
with the exclusive POLARSPHERE



You work less, make more sales, when the fame of the Kelvinator name backs the product on your floor! Customers have learned to trust it for the best in refrigeration engineering—value plusses like the hermetically sealed Polarsphere . . . the bathed-in-oil condensing unit that stays quiet, trouble-free, easy on current and maintenance.

Famous name features like the Polarsphere . . . the spurtless, feather-touch, hand dial that maintains a constant drink level . . . the Pre-Cooler that doubles the volume of cool water served . . . the Kelvinator purchase financing plan that makes the sale easier by making the purchase painless . . . the 5-year warranty . . . all add up to easier sales, greater profit volume!

Full KELVINATOR line gets all the sales. You miss no sales with Kelvinator—a water cooler for every need, in stores, offices, factories . . . bottle or pressure models . . . hand or foot-operated . . . cold compartment models.

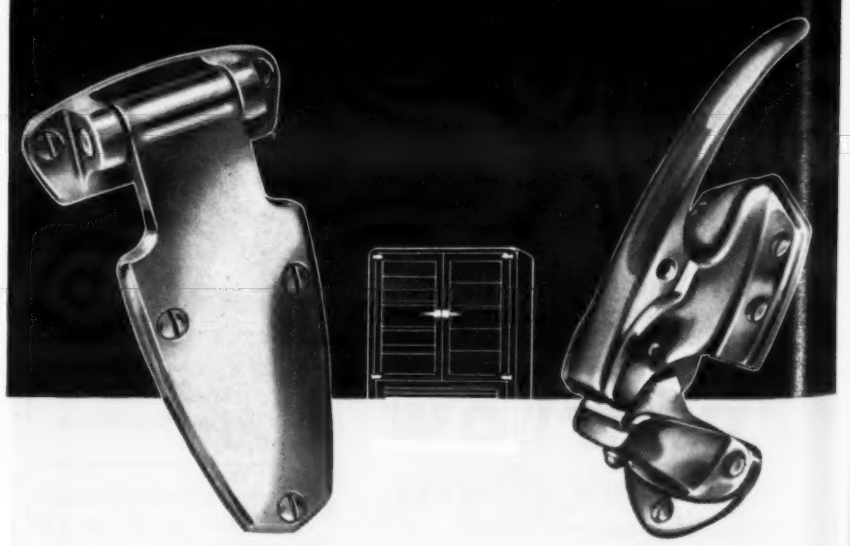
National Advertising and Sales Helps. Powerful selling national advertising in NEWSWEEK, U. S. NEWS, and BUSINESS WEEK, concentrates on the hot "thirsty" months, when sales come fast.

The KELVINATOR Distributor is in the local directory. Call him for full information; or write: *Kelvinator Water Coolers, 108 Lucas Street, Columbus 8, Ohio.*

PROFIT TODAY...BUILD FOR TOMORROW WITH

Kelvinator
THE NAME THAT SELLS...THE NAME THAT SATISFIES!

Grand Rapids Brass
COMMERCIAL REFRIGERATION HARDWARE
FOR NEW EQUIPMENT OR REPLACEMENT



Locks, Strikes and Hinges that Contribute to Quality in the World's Finest Refrigerators

Grand Rapids Brass Company
A DIVISION OF CRAMPTON MANUFACTURING COMPANY

Retail Grocers Get View Of New Products at Show

Here are some of the products displayed at the recent National Association of Retail Grocers show in Chicago. Pictures of other items will appear in future issues.

EFFICIENCY AND neatness of appearance marked the suggested layout for a produce department in the booth of C. V. Hill & Co. at the NARGUS Food & Fixtures Exposition. Design of the company's products permits refrigerated and unrefrigerated open display cases to be lined up with a matching scale stand to give the effect of a continuous row. June Anderson weighs a pre-packaged bag of spinach at the 51V scale stand. Behind her is a 52V non-refrigerated case while on the right is a 55VR refrigerated, open double-duty produce case.

"SALES BUILDER" is what Super-Cold Corp. calls its Model 102-10 double-duty enclosure. Kay Marlyn tests the temperature.

SPOT DISPLAYS of meat and produce items to encourage sales are made possible by this new model IT-5Y refrigerated table introduced by Hussmann. Measuring 5 ft. long by 3 ft. wide, it has a self-contained hermetic unit and forced air circulation. Display shelf area is split and adjustable to two depths. (The other model is Ann Demming.)

BOTH PRODUCE and dairy products can be displayed and sold from the Warren RCV combination unit which is designed for stores limited in space. Joanne Jones seems surprised to find both cheese and celery on display in the same case. Upper dairy compartment has double-glazed sliding doors and is lined with white porcelain. Open produce section is porcelain lined and has aluminum dividers. Storage is provided in two-door section at bottom. Lower left compartment houses hermetic unit.

"LOOKS TASTY," says Jane Casey to Jack Twist of Sherer-Gillett as she inspects a frozen ear of corn that came out of Sherer's Model 3008-C frozen food merchandiser which was among the cases this company displayed.

EASIER INSTALLATION of its DDM line of display cases has been made possible by Frigidaire through provision for a self-contained Meter-Miser, J. L. Kelsey explains to Virginia Rygel. The 6, 8, and 10-ft. models of this line will continue for remote installations also.

SPACEMAKER MERCHANDISING sales basket designed to clamp on gondola shelving is inspected by Tracey McCune. It was introduced at the NARGUS show by Adolph's Food Products, which originally developed it to promote sales of its own specialty food items by putting the product directly in front of the customer.

First Aid for cooling water troubles

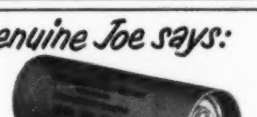
MICROMET®
prevents lime scale
•
controls corrosion

Here's the easy, simple, automatic way that leading engineers and manufacturers do away with expensive service calls. Use Micromet to prevent scaling and control corrosion in evaporative condensers and coolers . . . cooling towers . . . humidifiers . . . air washers . . . and piping.

FREE *AIR CONDITIONING BOOKLET gives all the facts. For general information or solution to specific water problems, write*

CALGON, INC., HAGAN BLDG., Pittsburgh 30, Pa.

Genuine Joe says:



Play safe . . .

When new motor-starting capacitors are needed, always replace with genuine Wagner Capacitors. Same high quality as original—and you're sure to be *right* every time. MB53-10

Wagner Electric Corporation
6471 PLYMOUTH AVENUE, SAINT LOUIS 14, MO., U. S. A.

WE WILL BUY!
SURPLUS
REFRIGERATION CONTROLS
PRESSURE and THERMOSTATIC
ANY QUANTITIES • MUST BE NEW
Write, Phone Or Call For
IMMEDIATE ACTION
TRACO Industrial Corp.
455 W. 19 St., N. Y. 19, WAtkins 4-4302
(Send for Traco's complete list of sensational bargains)

GENERAL MANAGER

$18,000 *Plus*

We are a thoroughly established, financially responsible company manufacturing heat transfer products. Our volume is substantial and profitable.

We require a General Manager experienced in engineering, production, administration, and sales. Age 40 to 45.

The starting salary is $18,000.00 with a sizeable increase based on results.

Your reply will be held in strict confidence. If desired, qualified applicants may contact George Taubeneck of this publication who will reveal the identity of the advertiser.

Box 3757
Air Conditioning & Refrigeration News

SLANTS on Service

"Slants on Service" is a new "package" devised by the NEWS to meet the needs of its busy readers in the service and contracting business. These helpful hints and suggestions for improved service methods and shortcuts have been assembled in capsule form.

Support Aids 'Cap' Tubes

Capillary tubes are likely to develop crystallization and subsequently break near the end where they are soldered if the tubing is not sufficiently supported or cushioned against vibration.

* * *

Stainless Steel 'Rusting' Caused by Steel Wool

Stainless steel will not rust, and for this reason and others, it finds much use on refrigerated fixtures. Complaints of rust may be received by servicemen, but what has happened is this.

Users may clean the stainless steel with ordinary steel wool. Minute particles of the wool become imbedded in the surface of the fixture. It is these particles that rust, not the stainless steel.

Scouring powder, water, and "elbow grease" will remove these particles. Stainless steel wool is available, but it shouldn't be necessary to use it on a stainless steel case.

* * *

Use Paraffin To Lubricate Sliding Rubber Case Doors

Hard rubber frames on sliding doors of refrigerated cases may sometimes require lubrication, but do not use oil of any type on meat cases, cautions John Spence, Hussmann service manager.

Use paraffin instead.

Oil may get on food, contaminating it and making it distasteful.

Condensing Water Too Warm? Here's Possible Solution

Where installers run into high condensing water temperatures (say around 95°) and low water pressures they often find themselves getting condensing temperatures well over specifications.

Some installers will change the range of the water valve and open it up wider, in which case it is likely never to close off. Water valve makers suggest using a bigger valve and possibly a booster pump.

* * *

Proper Fit at Heat Required for Brazing

The fit specified for making a silver-brazed joint is the fit of the joint when the metals to be joined have reached brazing temperature. Metals expand as they heat, and if the clearance is not sufficient at brazing temperature, the joint will be a poor one.

Clearance of about .0015 in. (or .003 in. across the bore) at brazing temperature is recommended by Handy & Harman.

Current Literature Available

To obtain further information on the literature listed below, please refer to key number preceding listing. Please use the "Information Center" form on "What's New" page.

Bonney Forge Offers 4-Color Calendar

——KEY NO. M-640——

ALLENTOWN, Pa. — A set of beautiful four-color sporting scenes has been made available in calendar form by Bonney Forge & Tool Works, manufacturer of quality wrenches and other mechanic's hand tools.

The illustrations cover hunting, fishing, and other sporting activities and are reproductions of the illustrations used in Bonney's current advertisments, but are without advertising and suitable for framing.

Reco Pamphlet Tells of Wall Arrangements

——KEY NO. M-641——

PHILADELPHIA—Reco Products Division of Refrigeration Engineering Corp. here is making available to dealers and distributors a pamphlet to acquaint them with the many arrangements possible using Reco standard modular wall and ceiling panels. These may be used to construct freezing tunnels, freezers, and medium temperature walk-in refrigerators.

The pamphlet contains an assembly manual showing the method of erecting Reco Fab modular panels. It also contains a group of general arrangement layouts, showing arrangements and applications of Reco Fab Frosti-Vaults.

Aeroquip Catalog Shows Industrial Products

——KEY NO. M-642——

JACKSON, Mich. — A new Aeroquip industrial catalog has just been issued by the Aeroquip Corp. here.

In addition to giving complete information about the company's industrial products, the catalog contains information on how to order parts and the construction and principles of Aeroquip hose lines and detachable, reusable fittings.

The catalog has a loose-leaf arrangement which permits users to order additional catalogs consisting of selected pages.

Lyon Metal Booklet Describes Cabinet Line

——KEY NO. M-643——

AURORA, Ill. — A booklet describing the complete line of kitchen cabinets and cabinet accessories made by Lyon Metal Products, Inc. here has been issued recently by the company.

The 28-page catalog shows how to plan kitchens, describes features provided by Lyon cabinets, illustrates how the different kinds of cabinets can be used in kitchen planning, and then gives detailed specifications.

FROM LAMP-LIT MIDTOWN LOFT--

to Sunny Suburban Acres!

The Pendleton Company has moved into its new factory . . . out on the edge of town.

The new modern factory, designed by architects Walsh & Van Dorn, has its setting in a beautifully landscaped plot plenty large to permit such additions to the plant as expanding business in the future may require.

The new plant . . . in its attractive setting . . . is locally regarded as a substantial improvement in the community.

The Pendleton Company manufactures refrigeration and air conditioning equipment.

• • • •

Old friends of The Pendleton Company will recall earlier days when it occupied cramped quarters in the old Schatz Building down on Seventh Street . . . space on the 3rd floor illuminated by drop-lights suspended from the ceiling here and there.

• • • •

During the past quarter century many companies in the refrigeration and air conditioning industry have moved into newer and larger and better locations to attain increased and more efficient production.

This is a visible sign of progress.

The history of the remarkable growth of this industry is crammed full of stories of success, accomplishment, expansion.

To trace this growth and to highlight significant events and developments within the industry . . . to pay tribute to the many companies and personalities who have made refrigeration and air conditioning one of the nation's greater industries . . . will be the purpose and editorial keynote of the coming—

SILVER ANNIVERSARY ISSUE!

To be published September 17.

• • • •

Marking 25 years of distinguished service to the industry . . . and celebrating the 25th birthday of Air Conditioning & Refrigeration News . . . the Silver Anniversary Issue will editorially set the stage for the advertiser to step into the spotlight and tell the audience something about his own background of achievements and the part he plays in the industry today.

Special advertisements prepared along this line will be in keeping with the special editorial content . . . will appropriately tie in with the general spirit of this very special issue.

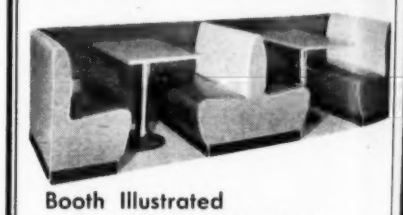
It offers a rare advertising opportunity!

Advertising closes September 7. Reservations now suggested.

Air Conditioning & Refrigeration News

The Newspaper of the Industry

CHROME FURNITURE at LOW... LOW PRICES



Booth Illustrated
single $39.50 list
double $59.50 list
wall panel $22.00 list

BIANCO manufactures quality chrome furniture at prices that command fast sales action. A complete line from de luxe to economy. Booths . . . settees . . . tables . . . wall panels. Upholstered in rugged duran for long life.

write for illustrated catalog

BIANCO Manufacturing Co. • 2736 VICTOR STREET • ST. LOUIS, MO.

WE WILL BUY!

AIR CONDITIONING UNITS

½ hp or Larger

ANY QUANTITIES • MUST BE NEW

Write, Phone Or Call For IMMEDIATE ACTION

TRACO Industrial Corp

455 W. 19 St., N. Y. 19, WAtkins 4-430

(Send for Traco's complete list of sensational bargains)

Servicing Hermetics In the Field

This is another in the new series of articles written to show the average serviceman how to service hermetic units in the field. Even those who have been working on hermetics for some time will find basic and practical information in these articles that will prove extremely helpful.

• • •

How Servicemen Can Determine Rating of Capacitors

By Arne Perttola, Owner and Manager
Brighton Hermetic Service, Detroit

In the preceding article it was explained that installation of a proper sized capacitor may be used as a temporary measure on a split-phase unit if the starting winding of the motor is partially shorted out.

There may be other conditions where a capacitor will be helpful on a split-phase motor. For example, installation of a capacitor has solved the difficult problem of short cycling on a hermetic refrigerator located in the kitchen of a restaurant. Here the refrigerator is operating under extreme conditions. The door is opened frequently, and temperatures in the kitchen may be higher than the refrigerator was designed for. The proper capacitor has proved to be the right answer in a case of this kind.

Checking of a capacitor to determine whether it is shorted or grounded was explained in an earlier article. A capacitor, however, may pass these tests and still not be perfectly good. Even though it's neither shorted nor grounded, it may have lost so much capacity that the motor will fail in starting.

To check a capacitor for its m.f.d. rating a voltmeter and ammeter are employed. The voltmeter is wired in parallel and the ammeter in series with the capacitor. In getting the voltage and ampere readings do not keep the capacitor in the circuit more than 15 seconds at a time. Allow some time to lapse before repeating the test.

After the voltage and amperes are obtained, these figures may be substituted in the following simple formula to determine the rating of the capacitor:

$$\text{M.F.D.} = 2{,}650 \times \frac{\text{amperes}}{\text{volts}}$$

There isn't much danger in installing a capacitor in the starting winding circuit of a split-phase hermetic household unit if the capacitor has a rating of 100 to 120 m.f.d. If perfection is desired, the voltage of the starting winding should not exceed 138 volts. If higher voltage occurs, the capacitor will dry out and become defective in a relatively short time.

A few hermetic units in the field use a running capacitor as well as a starting capacitor. Also, there are a few units that have two capacitors in the starting winding, both being hooked up in parallel with each other.

It is these few systems that cause headaches for the average serviceman trying to diagnose the difficulty. This is particularly true where two capacitors in parallel are housed inside of a single casing.

When giving the "spark test" such capacitors may appear okay but still they won't start the unit. In this case you will probably find that one of the two capacitors is open. In this event the capacitors will have to be replaced.

In replacing a capacitor it is quite important that the replacement capacitor be of the same type and rating as the original. This is especially true if you are replacing a running winding capacitor.

Proper Warm Side Vapor Barrier Needed To Avoid 'Vapor Dams' In Insulated Wall

DETROIT—Importance of using proper vapor barriers to avoid "vapor dams" in an insulated wall and the ice layer that results was stressed before the American Society of Refrigerating Engineers at its 38th spring meeting here by Edward Simons, consulting engineer.

In presenting an analysis of the physical and chemical characteristics of redwood bark fiber insulation, Simons also revealed preliminary results of field studies made on existing installations incorporating this insulation.

"Efficient 'warm side' vapor barriers are required in insulated construction," he emphasized. "Interior 'cold side' linings such as wood, adversely painted or coated surfaces, plaster, and glazed tiles may act as 'vapor dams' which promote condensation of vapor and development of ice layers at sub-freezing temperatures."

Where such inner wall linings can't be avoided, Simons suggests that the warm side vapor barrier be as perfect as possible; that insulation thickness be increased; that the walls be vented to the cooling coils; that a drainage system be incorporated to thaw and remove moisture during seasonal shut-down.

To show what can happen Simons cited investigations of two similar insulated rooms, one of which proved free of ice but the other developed an ice layer 15/16 in. thick on the cold side.

The first was a freezer room in Santa Cruz, Calif., which was insulated with 11 in. of shredded redwood bark fiber. Interior wall sheathing was 1 in. by 4 in. D grade Douglas fir flooring generally in short lengths with numerous butt joints, many of which were open 1/8 in. Numerous horizontal joints were open, too, and the freezer room side was painted with a white cold storage enamel, Simons said.

Exterior vapor barrier consisted of three layers of Brownskin sheathing paper creped and impregnated with a bituminous compound. A layer of Pioneer Flintkote Asphalt Emulsion was applied between each of the Brownskin sheets.

"When this wall was opened in October, 1950, no free moisture or ice was found at any point in the insulated wall," Simons said. "This wall was again opened in May, 1951, at a position on the wall surface where the horizontal cracks were quite tight and where the butt joints of the sheathing were at a minimum. Again, no sign of ice or free moisture was found."

The wall, incidentally, had been constructed in 1938.

In contrast, examination of the walls of a frozen food storage plant in Reno, Nev., showed an ice build-up nearly 1-in. thick, according to Simons. Here the exterior wall (subject to westerly exposure) was painted white on stucco. Between the stucco and the sheathing was a vapor barrier consisting of one layer of vaporproof, light colored, kraft paper, the joints being lapped and sealed with hydroseal.

Sheathing on the interior wall was 8-in. painted ponderosa pine applied horizontally with tongue and groove joints. In both this and the Santa Cruz rooms, double offset-stud construction was employed.

"A test hole was opened on the interior and an ice layer 15/16 in. thick was found," Simons reported. "Since the wall had been installed in 1944, the building up of this ice layer had occurred in six years. The total wall thickness was 10 in., so that the net active thickness of redwood bark insulation was 9 1/16 in. The interstices of the tongue and groove were filled and sealed with ice."

It was the "very extensive vapor barrier construction" of the one plant that prevented the inner wall lining acting as a vapor dam and forming ice in contrast with the less effective vapor barrier of the other plant, Simons pointed out.

General Controls Builds 24,000 Sq. Ft. Plant Addition

GLENDALE, Calif.—Construction on a 24,000 sq. ft. addition to the present engineering building has begun at the Glendale plant of General Controls Co., it was announced by W. A. Ray, president.

The considerable increase in engineering and research activities was brought on largely by the company's preparation for the defense mobilization program and the need for an expanded civilian product line, it was stated. The new structure will be two stories in height.

This handsome pair of instruments never fails to win the man who wants the ultimate in testing gauges.

The four-scale "Serviceman"—ultimate achievement in testing thermometers.

This Type WP Marsh Electrimatic regulator is one of many covering all needs. Line also includes suction throttling valves, flow control valves, and the finest of solenoid valves.

That's the way "Bob" Shaw, Manager of Authorized Supply Co., Los Angeles, said it. You see him in the center pointing admiringly at a Marsh Electrimatic solenoid valve, and telling it to Frank Whitman (left) of the Marsh Instrument Co., as this photo was snapped. The man on the phone is "Bill" Irving, busy counter man for this respected jobbing firm.

"In this kind of business," says Mr. Shaw, "you've got to handle the kind of equipment that wins and holds friends; you've got to know it thoroughly; and you've got to have it right on hand." He points up this policy by carrying a full line of Marsh refrigeration equipment — testing instruments, pressure gauges, dial thermometers and Marsh-Electrimatic controls and valves of all types.

This southern California firm is typical of progressive wholesalers in every industrial trading center of the U. S. who would like to supply you with Marsh refrigeration instruments and controls. They want you to know the Marsh line; the quality line; the repeat order line. Some of the popular Marsh products are described here.

See your jobber

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corporation
Dept. 9, Skokie, Ill.

MARSH *Refrigeration Instruments*

HI-PRESSURE FLEXIBLE **Koroseal*** ARMORED WITH STAINLESS STEEL

COSTS NO MORE . . . foot for foot, Braided Koroseal costs no more than any other tubing used.

SAVES MONEY . . . users of Flexible Koroseal report better than 20% saving in footage used as compared with rigid connectors . . . also report less fittings required.

SAVES MAN HOURS . . . users of Flexible Koroseal report better than 50% saving in assembly and installation time. You can snake Koroseal through ducts and openings, bend it around sharp corners, twist it around curves without special tools or special connections.

CUTS SERVICE CALLS . . . because Armored Koroseal is flexible, non-porous, translucent, tough, vibration proof, resists abrasion, tasteless, non-toxic, sanitary; doesn't crystallize, flake, rust, clog, chip, kink, split, stiffen, crack or peel; not affected by acids, oils, alcohol, lye; rodent proof, easy to keep clean, withstands hot or cold from 200° F. to −40° F.

HEDEMAN PRODUCTS INC., GREAT NECK, N. Y.
Telephone: Great Neck 2-3700 • Cable "Hedeman"

FLEXIBLE KOROSEAL ARMORED WITH STAINLESS STEEL FOR BEVERAGES • CARBONATED WATER • PLAIN WATER • CO_2 GAS • AIR
FRUIT SYRUPS • CITRUS FRUIT JUICES • GINGER ALE • COLA SYRUPS • MILK • COFFEE • ROOT BEER • HOT CHOCOLATE • BEER • ALE

IF YOU MAKE, SELL, SERVICE OR MAINTAIN EQUIPMENT SIMILAR TO THAT PICTURED ABOVE
YOU ARE INVITED TO SEND FOR OUR FREE CATALOG
HEDEMAN PRODUCTS INC., GREAT NECK, N. Y.

* Reg. T.M. B. F. Goodrich Co.

LOOK to LARKIN
for Durability

THE ORIGINAL, PATENTED
CROSS-FIN COIL

The refrigeration coil that changed an industry stands today unchallenged for performance, user satisfaction and lasting durability. Made from only the finest materials by skilled craftsmen under exacting standards, every Larkin Coil features imbedded fin-to-tube contact, swaged connection, silfos welded construction, and staggered tubing. Write for complete details.

Manufacturers of the original Cross-Fin Coil — Humi-Temp Units — Evaporative and Air Cooled Condensers — Air Conditioning Units and Coils — Direct Expansion Water Coolers — Steel Vacuum Plate Coils — Heat Exchangers.

WATCHDOG OF THE NATION'S FOOD SUPPLY
LARKIN COILS
519 MEMORIAL DR., S.E. • ATLANTA, GA.

By eliminating losses from leaking liquid indicators
Leak-proof
E-Z-SEE
pulls up greater profits

(1) E-Z to see thru—both sides of the body are open to let in light. (2) Positively leakproof — can't leak, springs automatically maintain the right force to form a positive seal. (3) Perfectly Safe, glass protected for pressures up to 500 psi.
AT LEADING WHOLESALERS EVERYWHERE.
Literature and prices on request.
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Refrigeration Problems
and their Solution
by Paul Reed
For Service and Installation Engineers

Paul Reed

Insulation: Selection And Installation (7)

We have said that air is a very poor conductor; that insulations get practically all of their insulating value from the poor conductivity of the air enclosed in the tiny air cells, and in and between the fibers; that it is really the air in the air cells that is the insulation rather than the material of the insulation itself.

For air to be a good insulation, it must be dead air, that is, it must not be moving. Perfectly dead air, without motion, does have a very high insulating value, much higher in fact that almost any of the insulation materials. The conductivity, or "k value" of dead, unmoving air is .18 B.t.u. compared with from .24 to .32 B.t.u. per square foot one degree thick, per degree, per hour, for such commonly used insulations as cork, mineral wool, the fiber insulations, etc.

Dead air is therefore one of the very best insulators known. So why use insulations at all; why not use air in the walls?

ONLY DEAD AIR IS GOOD INSULATION

The answer is, of course, that dead air is extremely difficult to achieve because of convection currents in the air.

To better understand this, refer to Fig. 3 showing a wall consisting of an inner and outer surface between which is a 1-in. air space. The outer wall is 90°, corresponding to the outer air of 90°. The inner wall is 70°, corresponding to the temperature inside the room as maintained by some cooling methods—ice or mechanical refrigeration. The heat passes through the wall by three means:

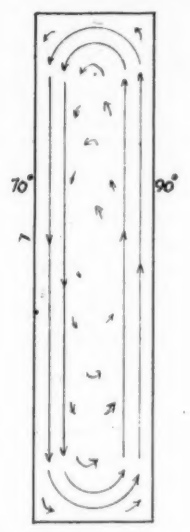


Fig. 3—Convection air currents in a high wall. Air movement rapid.

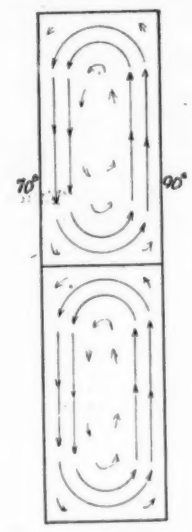


Fig. 4—Convection air currents broken by one horizontal divider. Air movement slowed.

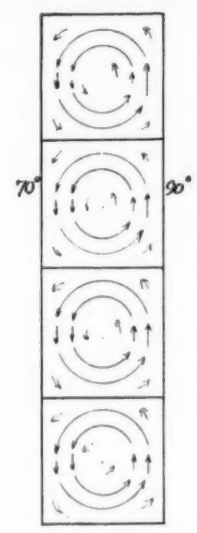


Fig. 5—Convection air currents broken and further slowed by additional horizontal dividers.

RADIATION

The 90° surface radiates heat directly across the 1-in. space, and this radiant heat is absorbed by the inner surface. How much of the heat in the outer surface gets across the 1-in. space depends upon the nature of the two surfaces themselves as will be explained later. Nevertheless, a good deal of heat in the outside surface gets across by radiation, and is absorbed by the inner surface.

CONDUCTION

Some heat travels directly through the air itself, for air is a substance; so it will carry some heat in very much the same manner as any other material. However, air has a low conductivity, so the amount actually conducted by the air is small even compared to such insulations as cork, for example.

CONVECTION

We know that any fluid (either a liquid or a gas) expands when it is warmed, and therefore must occupy a larger space. In doing so, its density, or weight per cubic foot, becomes less. Conversely, the density of the fluid increases as the temperature decreases.

So the air in the wall next to the outer surface, becomes lighter as it is warmed by the warm outer surface; and the air in contact with the cool inner surface becomes heavier as it is cooled by the cool inner surface; so the heavier, cool air drops and pushes the lighter, warm air upward.

In this way, a circulation of the air between the warm outer surface and the cool inner surface, is set up. This circulation of air, known as "convection," carries the heat from the warm outer surface to the cool inner surface, and we say that the heat transfer is by convection.

The rapidity of heat transfer by convection depends upon the rapidity of the air movement; the faster the air movement, the faster the rate of heat transfer by convection; the slower the air movement, the slower the rate of heat transfer by convection.

If the outer wall is a great deal warmer than the inner wall, the faster the air next to it is warmed, the quicker it expands and becomes lighter, and the faster is the air movement by convection. So the greater the temperature *difference* between the inner and outer walls, the faster is the rate of heat transfer by convection.

At the same time, and for the same reason (a greater temperature difference) the faster is the rate of heat transfer by radiation and by conduction.

EFFECT OF WALL HEIGHT

If the wall is a high one, the air is in contact with the warm outer surface longer, and thus gets warmer and lighter, so the faster becomes the air movement. If we put a divider across the wall, as shown in Fig. 4, we reduce the rate of air movement, and consequently the rate of heat transfer by convection, quite considerably.

If, as in Fig. 5, we put in additional dividers, we again reduce the rate of air movement and the rate of heat transfer by convection. If we keep doing this until we have the wall composed of many small air spaces, we have broken down the large, rapid air movement into many small, slow moving convection currents.

This is what an insulation does, for it consists of thousands of very small air spaces that are so small that there is very little air movement in them, and the air is almost "dead" air. This creates a good insulation, for dead air carries heat very poorly.

The walls of these air cells themselves conduct heat, however, so the total result is a conductivity of from about .24 to .32 B.t.u., somewhat above the conductivity of dead air itself which is .18 B.t.u. per square foot one inch thick, per degree temperature difference, per hour. Thus, a large air space only, is poor insulation because, due to convection, the air is not dead air, but is moving air.

If the wall could be hermetically sealed, and the air pumped out, down to a deep vacuum, than a one inch space would be an effective insulation. In fact, it would not need to be a one inch space. It could be a rather thin wall, for with the air removed, the heat would be transferred across the space by radiation only, and there would be no transfer by either conduction or convection.

THE "VACUUM BOTTLE"

This principle, that is, a vacuum between the inner and outer walls, is used in making the so-called "vacuum bottle" which is in effect a glass bottle with a double wall, and the air exhausted from the space between the two walls.

The vacuum bottle employs another method of reducing heat transfer through a wall. Since heat transfer through its wall, by either conduction or convection, has been reduced to an extremely small amount, only heat transfer by radiation remains. Even this means of heat transfer has been greatly reduced in the vacuum bottle by using silvered glass of great reflective ability, which brings us to the subject of reflective insulation, which will be discussed in the next instalment.

(To Be Continued)

Walsh To Head Induction Motor Sales for G-E Small, Medium Motors

SCHENECTADY, N. Y.—Richard Walsh has been appointed manager of the Induction Motor Sales Division of General Electric's Small and Medium Motor Divisions here, it was announced recently by Olaf F. Vea, manager of sales for the divisions.

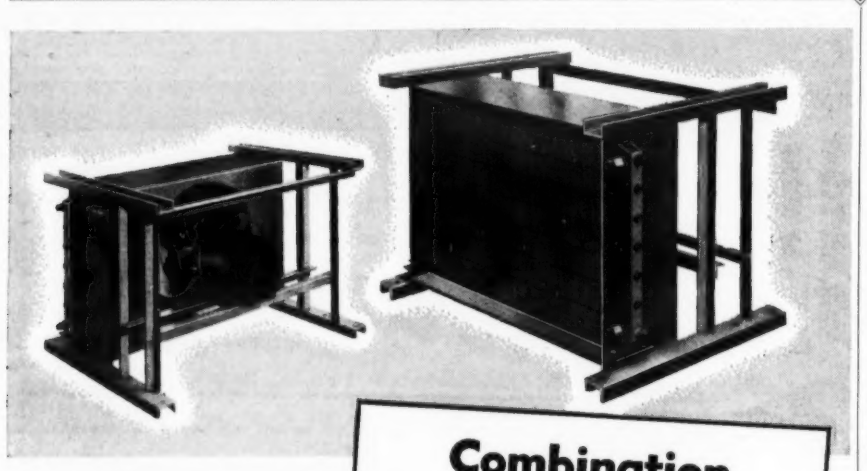
Walsh was graduated from Notre Dame university. He completed the G-E Test Course for student engineers in 1932, and a year later joined the General Appliance Co., a G-E affiliate.

He returned to General Electric, Schenectady, in 1934 to become a member of the Induction Motor Division. He was transferred to the company's Detroit office in 1941 as a motor specialist, and was made district motor specialist at Chicago in 1946.

Appointed assistant manager of the Induction Motor Sales Division in 1948, Walsh became acting manager of the division in January of this year.

Applewhite's Appliance Opens

BROOKHAVEN, Miss. — Applewhite's, dealing in refrigerators and other merchandise, has opened for business in its new location at 121 S. Jackson St.



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Combination AIR and WATER COOLED CONDENSERS

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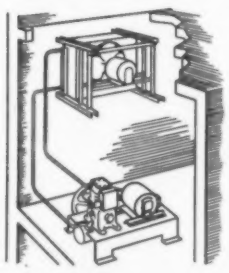
- WITH CLEANABLE WATER TUBES
- CAPACITIES ¾ to 5 H. P. (MODELS RAWC)

Here it is: The modern solution to the refrigeration condenser problem. Installation is completely flexible . . . with mounting in the most convenient location. This makes it easy to assure ample air supply.

Independent of emergency failure of either water or air supply.

Reserve capacity always available.



Pays for itself in Water saving

Rugged framework provides for either floor or ceiling mounting. Oversize motors and fans will handle external static pressure if air ductwork is required.

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STORE CONDITIONER

Your profits protected by 5 year warranty on compressor plus generous repair and replacement allowance. Install singly or in teams. Models in 2, 3, 5, 7½ and 10 ton sizes handle all conditioning jobs.

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Ranco Replacement Reference No. 1244 Lists Ranco replacements for more than 4000 controls. Available only through your Ranco wholesaler.

COOL OFF . . . there are 8 Ranco replacement controls especially designed for water cooler installations.

Don't worry about finding the right replacement for Water Coolers. *Ranco makes it!* In fact, there are eight precision-built models designed for accuracy and trouble-free performance. Ranco controls put the "cool" in cooler . . . eliminate costly call-backs, assure customer satisfaction, and provide greater profits. Why shop all over town when *one stop* at your Ranco wholesaler's will do the trick. See him today and *replace it right* with Ranco.

Ranco Type KOD 136 Controls for Water Coolers

Ranco Inc.
COLUMBUS 1, OHIO

WORLD'S LARGEST MANUFACTURERS OF REFRIGERATION CONTROLS

ASHVE To Meet July 2--

Concluded from Page 1, Column 3)

oratory in Cleveland on four conventional types of ceiling plaster panels, using both non-ferrous tube and ferrous pipe, located both above and below the lath.

The paper will show that the difference between the average tube temperature and the average panel surface temperature can be related to the heat output from the panel by a simple empirical equation. Panel heat outputs are given for various spacings of tubes.

In another paper, three Oregon engineers will describe the application of a water-to-water heat pump and complete air conditioning to a newspaper plant and office building. Among the innovations to be reported are the use of well water for pre-heating and pre-cooling, the recovery of heat from exhaust air, and a completely automatic system of control even to the point of starting and stopping centrifugal refrigeration equipment, the heat pumps.

The complete technical program follows:

Monday, July 2, 9:30 a.m.

"Aluminum Ceiling Panels for Heating and Cooling," by E. S. Howarth, chief, metal working division; S. C. Huddleston, research engineer, and R. M. Koch, research engineer, all of Research Laboratory, Aluminum Co. of America, New Kensington, Pa.

"Laboratory Studies of the Thermal Characteristics of Plaster Panels," by C. M. Humphreys, senior engineer; C. V. Franks, research fellow, and L. F. Schutrum, assistant research engineer, all of ASHVE Research Laboratory, Cleveland.

"Optimum Panel Surface Distribution Determined from Human Shape Factors," by F. W. Hutchinson, professor of mechanical engineering, University of California, Berkeley, Calif., and Merl Baker, assistant professor of mechanical engineering, University of Kentucky, Lexington, Ky.

"Barometric Draft Control Analysis," by H. B. Nottage, research associate; D. W. Locklin, research engineer, and R. G. Huebscher, research fellow, all of ASHVE Research Laboratory, Cleveland.

Tuesday, July 3, 9:30 a.m.

"Control of Air Streams from a Long Slot," by Alfred Koestel, instructor in mechanical engineering, and Chia-Yung Young, graduate assistant in mechanical engineering, both of Case Institute of Technology, Cleveland.

"Pressure Losses of Take-Offs for Extended-Plenum Duct Systems," by J. W. Holl, research assistant in mechanical engineering; S. F. Gilman, research assistant, R. J. Martin, associate professor of mechanical engineering, and S. Konso, professor of mechanical engineering, all of the University of Illinois, Urbana, Ill.

"Warm Air Perimeter Heating—Heat Emitted from Floor Surface," by J. R. Jamieson, research associate in mechanical engineering; R. W. Roose, research assistant; S. Konzo, professor of mechanical engineering, all of the University of Illinois, Urbana, Ill.

"Furnace Thermal Efficiency Determined from Flue and Jacket Loss," by H. L. McPherson, assistant chief standardization engineer; K. L. Badger, research engineer, and Walter S. Zawada, research engineer, all of the American Gas Association Laboratories, Cleveland.

Wednesday, July 4, 9 a.m.

"Heat Pump Application to a Newspaper Plant," by J. D. Kroeker, consulting engineer; John H. Bonebrake, office of J. Donald Kroeker, and James A. Melvin, chief operating engineer, *Oregonian* bldg., all of Portland, Ore.

"Two-Year Performance of a Heat Pump System Furnishing Year-Round Air Conditioning in Modern Office Building," by Philip Sporn, president, and E. R. Ambrose, air conditioning engineer, both of the American Gas & Electric Service Corp., New York City.

"Climatology as an Aid In Heat Pump Design," by G. S. Smith, professor of electrical engineering, University of Washington, Seattle.

"Heat Requirements of Buildings," by C. W. Signor, supervisor of customers' steam service, The Detroit Edison Co., Detroit.

The committee on arrangements includes: general chairman, Bert W. Farnes; honorary chairman, Prof. E. O. Eastwood, ASHVE past president; vice chairman, Frank Urban; president Oregon chapter, Harold McKenzie; reception, Bruce Morrison; sessions, Wayne McCarthy; finance, Don Kroeker; entertainment, Ed Lokey; ladies, John McDermott; banquet, Tom Taylor; sports, Dick Lankow; transportation, Al Freeman; attendance, Carrol Brissenden; publicity, Abe Hoss; special activities, Dick Blankenship; and Alaska representative, Bill Hoss.

Weber Showcase Buys Airquipment Co.; Will Make Aviation Equipment

LOS ANGELES—Weber Showcase & Fixture Co. here has announced the purchase of Airquipment Co., a subsidiary of Lockheed Aircraft Corp. The sale price was reported to be $1,300,000.

Weber's own aircraft division will be combined with Airquipment and both operations will become the Weber Aircraft Corp. The new firm will be able to produce about $15,000,000 of aircraft equipment annually, according to Karl Weber, president.

He stated that present Airquipment personnel will be maintained as far as possible. He added that the organization will continue to produce ramps, jacks, truck ladders, slings, cranes, work stands, covers, and other items for servicing aircraft.

Aerol Co., Inc., a subsidiary of Airquipment, was not purchased by Weber. It will become a direct subsidiary of Lockheed.

Meltzer's Moves

MIAMI, Fla.—Meltzer's, handling Hotpoint appliances, formerly located at 230 N. E. 14th St., has occupied new and larger quarters at 20th St. and Biscayne Blvd. I. N. Meltzer is head of the firm.

Furniture Mart Activity Slow--

(Concluded from Page 1, Column 3)

the new Gibson refrigerator models and the King home freezer will be found elsewhere in this issue. But Norge is not releasing a detailed publicity story or prices as yet on its new model AW-422 washer.

However, some details were picked up on the new product. A big feature which will be heavily played in promotion is its "Time-Line" control. This is mounted on the back panel of the washer and consists of a red knob which moves from left to right indicating the positions "start," "fill," "wash," "rinse," "spin dry," and "off." The control can be stopped at any point desired.

There is also a button on the back panel to provide either "warm" or "hot" water.

Washing action is through a "wave action" agitator. There are three rinsing actions—two separate spray rinses and a "Tidal Wave" rinse during which the rinse water rises over the clothes level, then goes through an agitated overflow rinse and then into a deep-wave rinse.

To assure the removal of sand and grit, Norge has included a ring of small openings in the bottom of the wash tub through which grit is forced out during the rapid spin. In the spin dry action the final spin extraction lasts six minutes.

Other features include non-bolt-down construction, aerated water flow fill, non-clog pump, unbalanced load safety switch.

PHILCO ADDS NEW FEATURES TO REFRIGERATORS

Philco Corp. has added some extra convenience features to two of its 1951 models, it was announced at the markets. The 9-cu. ft. model 912 which lists at $259.95 will contain a new plastic crisper bin and model 915 will have a new metal crisper. Dealers with these models in stock will be given a six-piece set of refrigerator containers.

Home Appliance Div. of Murray Corp. of America is offering two new "special" 36-in. range models. One is a gas range to list at around $190, the other an electric model to sell for $230. Features include a newly styled backsplash with add-on lamp ensemble, divided top with large work area, and "waterfall" front design.

Tennessee Stove Works also introduced two new electric range models. A fully automatic model with divided top will sell at $249.50. A standard divided top model will list at $199.50. Features include background lamp, utility outlet, controls located in backsplash, oven heat control with automatic preheat feature, and two large storage drawers.

Arthur Optner introduced a refrigerator cellarette known as a "Frigid-Commode." With doors closed this modern wood cabinet with Formica top has the appearance of any other storage unit in a furniture suite, but when the doors open a 2-cu. ft. electric refrigerator with ice cube making evaporator is revealed.

The new promotion gimmicks, as mentioned before, are designed to give the dealer something "extra" to talk about with his customers, and to stimulate added effort on his part.

Ben-Hur Mfg. Co., producer of home and farm freezers, is offering a "Freez-R-Pak" kit to purchasers of home and farm freezers. This kit, designed to get the user started off on the right foot in use of his freezer, is claimed to have a retail value of $39.25.

Items included in the kit include a 6-tray ice cube maker, West Bend food blancher, a variety of Crown Freez-Tainers, a variety of Marathon Freeztex packages, Marathon Tite "one-wrap" locker paper, 36 Polyethylene bags, Permacel tape, automatic marking pencil, and defroster paddle.

As a tie in with its "Countess" advertising campaign promoting its "Frost-Free" electric refrigerator, the Westinghouse Electric Appliance Div. has set up a program for building store traffic whereby dealers will offer an insulated bag, useful in preserving frozen foods, to prospects who come in for a demonstration. Called the "Kold Keeper," the free gift bag uses graphic illustrations to show how it keeps frozen foods from thawing when the prospect defrosts with a non-automatic defrosting type refrigerator, and reminds her that she won't need such a bag with an automatic defrosting model.

FEDDERS SALESMEN GET CASH AWARDS

A "Demonstration Award Plan" whereby a salesman gets a cash award for each Fedders room cooler that he puts out on demonstration has been inaugurated by the Fedders-Quigan Co. air conditioning division. Frank Mitchell, sales manager of the division, says that trial runs on this plan have shown that a great majority by far of units put out on demonstration stick and result in sales.

Lonergan Mfg. Co. is using a similar plan to encourage demonstrations in the user's home or place of business for its newly introduced mechanically refrigerated dehumidifier.

Other companies are starting or readying salesmen's contests, with prizes in line with the recently announced Hotpoint contest, in which top prize will be a Cadillac automobile.

Color TV Has Enthusiastic Response at Mart

CHICAGO — The CBS Columbia color television demonstration opened in the Merchandise Mart here for retail appliance store buyers attending the Midyear Home Furnishings Markets and the response was for the most part enthusiastic—with some exceptions taken.

Buyers expressed themselves as surprised at the "clarity" of the color reproduction, and lack of a smearing or blurring effect. However, viewers were practically unanimous in their criticism that the size of the picture was too small.

Penney Store Gets Cooling

DALLAS — Construction work is under way on an 180-ft. x 120-ft. building in Inwood Village for a new J. C. Penney Co. store. The building will be completely air conditioned.

NEMA Extends Display Contest to July 15

NEW YORK CITY — Because of the wide-spread interest aroused by the 1951 Electric Housewares display contest, the Electric Housewares section of the National Electrical Manufacturers Association has announced an extension of the closing date from June 15 to July 15.

Awards will be announced in September, rather than at the July Housewares Show in Atlantic City as originally scheduled.

Display men for electric housewares dealers are eligible to win first prize plaques and certificates of excellence for the most outstanding window and interior displays dramatizing the campaign theme, "GIVE ELECTRIC HOUSEWARES—FIRST CHOICE FOR EVERY GIFT OCCASION."

Visual merchandising experts will judge all entries, and winning photos will receive nationwide publicity.

Electric housewares dealers who wish to submit photos of their displays, should address all entries to:

Window Display Contest Committee, Electric Housewares Section, National Electrical Manufacturers Association, 155 East 44th Street, New York 17, N. Y.

McCORD CONDENSERS

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MAXIMUM HEAT TRANSFER

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FULL SIZE BENDS NO JOINTS

COMPLETE RANGE OF SIZES

McCORD BUILDS A COMPLETE RANGE OF SIZES FOR DOMESTIC REFRIGERATION. Write for Engineering Information

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SELL LOW COST AIR-CONDITIONING.

The New Improved "POLAR BREEZ" AIR COOLERS with the NEW AUTOMATIC HUMIDITY and Temperature CONTROL

"POLAR BREEZ" is said in complete "packaged units" in various sizes for all types and sizes of business buildings and stores.

POLAR BREEZ coolers have guaranteed ratings in accordance with ASH & VE code of testing and are complete packaged units.

Air is purified by a chemical process removing bacteria and algae. Range—2,000—25,000 C.F.M. . . . Coolpad Fibre Filter Cooling Pads . . . Self cleaning—no servicing . . . Weather Proof Metal Housing . . . Multi-Blade Pressure Type Blower . . . Directional Flow Grille . . . Roto-Atomizer . . . Doubles cooling and washing action!

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WE WILL BUY!
SURPLUS REFRIGERATION UNITS
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ANY QUANTITIES • MUST BE NEW
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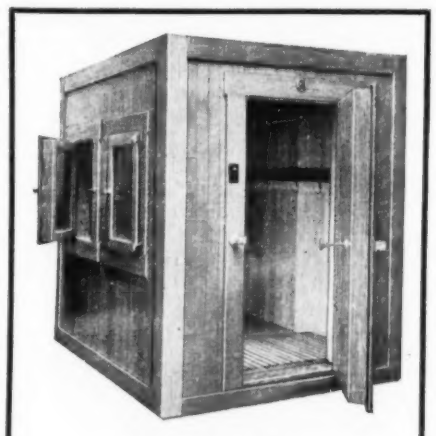

YUKON WALK-IN COOLER

THE WALK-IN WITH ALL THE NEWEST FEATURES

The sensational new Yukon Walk-In Cooler features tongue in groove construction for "LEAK PROOF" fit . . . steel lag screws and steel pads for "GRIP TIGHT" assembly . . . asphalt application for "SURE SEAL" joints and seams. New corner construction (one piece angle type) and standard 2' and 3' prefabricated sections for flexibility of size. Sturdily constructed large door equipped with heavy hardware.

SEND FOR OUR CATALOG SHOWING COMPLETE LINE OF COMMERCIAL REFRIGERATION EQUIPMENT

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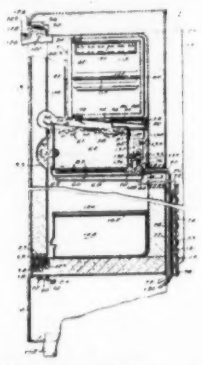
2801 LOSEY BLVD., S. LA CROSSE, WIS.
EXPORT REPRESENTATIVES:
Melvin Pine & Co., 80 Broad St., New York, N. Y.
Cable Address: Eximport

PATENTS

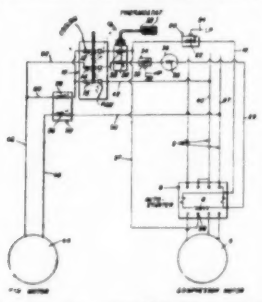
Week of March 6 (Continued)

2,544,394. REFRIGERATOR WALL AND CLOSURE. Glenn Muffly, Springfield, Ohio.



3. A refrigerator cabinet, a main food space in said refrigerator, a door for said main food space, means for cooling said main food space, a second insulated enclosure within said refrigerator, a door for said enclosure, means for cooling said enclosure, the contacting surfaces of the last said door and the stationary portion of said enclosure being formed of substantially solid and noncompressible material, and means for forcibly breaking an ice bond between the last said door and said enclosure walls.

2,544,592. AIR CONDITIONING APPARATUS. Emanuel Feinberg, Detroit, Mich.



1. In an air conditioning apparatus control circuit, an electric power source, an electric motor, a switch disposed to connect the motor to the power source, electrical means to open and close the switch, a second electric motor, a second switch connecting the power source to the electrical means and to the second motor, and a connection from the power source to the electrical means independent of the second switch.

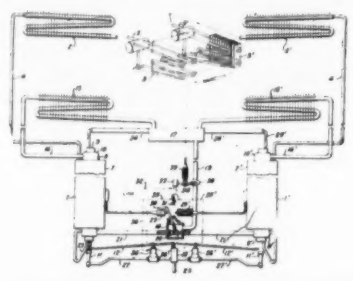
162,297. SELF-CONTAINED AIR CONDITIONING UNIT. Lurelle Guild, New York, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Application Aug. 7, 1950, Serial No. 11,657. Term of patent 7 years. (Cl. D62—4.)

The ornamental design for a self-contained air conditioning unit as shown and described.

Week of March 13

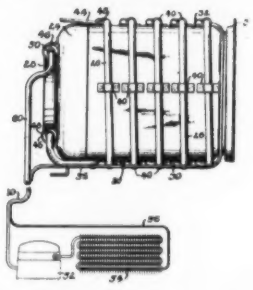
2,544,916. CONTROLLED ABSORBER COOLER IN REFRIGERATOR. Curtis C. Coons, North Canton, Ohio, assignor to The Hoover Co., North Canton, Ohio.

1. In a refrigerating apparatus a generator-absorber, a cooling system for said generator-absorber having a heat absorbing part in heat exchange relation with said genorator-absorber and a heat rejecting part, means connecting said heat rejecting and heat absorbing parts for circulation of cooling fluid therebetween, a vapor lift pump connected to receive cooling liquid from said heat absorbing part and to pump cooling medium from



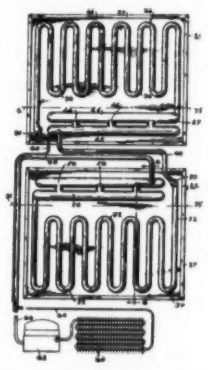
said heat absorbing part to another part of said cooling system, means for heating said generator-absorber and said pump, and means for simultaneously energizing said heating means and for preventing flow of cooling medium from said another part of said cooling system into said heat absorbing part.

2,544,937. REFRIGERANT EVAPORATOR. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application July 5, 1947, Serial No. 759,157. 3 Claims. (Cl. 62—126.)



1. A refrigerant evaporator comprising, sheet material forming top, bottom, and sides of a container, a refrigerant passage in heat exchange relation with said sheet material, a closure member fitting over said top, bottom, and sides forming the rear wall of the container, and a refrigerant accumulator carried by said closure member connected to said refrigerant passage.

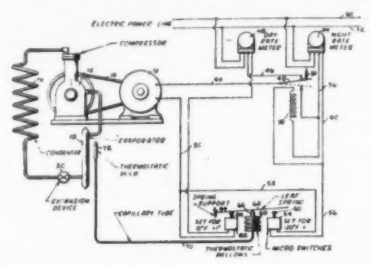
2,544,938. REFRIGERANT EVAPORATOR. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application March 24,1948, Serial No. 16,765. 4 Claims. (Cl. 62—126.)



1. A refrigerant evaporator having a series circuit refrigerant passageway comprising an upper and a lower L-shaped plate having legs thereof forming the top and bottom walls of the evaporator and having their other legs partly forming an upright wall of the evaporator, a sinous passage formed in each of said top and bottom walls, a manifold in the upright leg of the upper plate connected to the outlet of the sinous passage in said upper plate and connected to the inlet of the sinous passage in the lower plate, and a manifold formed in the upright leg of the lower plate connected to the sinous passage in said lower plate.

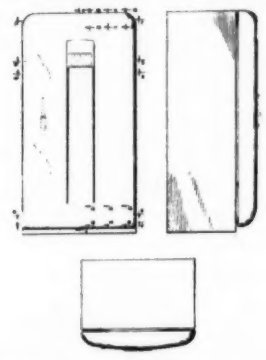
2,545,054. REFRIGERATOR CONTROL. Wilbur E. Stitz, Dayton, Ohio. Application Feb. 25, 1946, Serial No. 650,056. 2 Claims. (Cl. 236—46.)

1. A control mechanism for using a refrigeration system having an off-peak load circuit and a peak load circuit, said off-peak load circuit having an off-peak load rate meter and the peak load circuit having a day rate meter, said off-peak load circuit having means for connecting the off-peak load rate meter into the power lines during predetermined off-peak load periods, the



combination including a switch normally biased to close the circuit through the load into the day rate meter, an electromagnetic switch energized in response to the off-peak load rate meter being connected into the power lines for causing said switch to open-circuit the day rate meter and connecting the load into the off-peak load rate meter, first switch means responsive to one predetermined condition for closing the circuit through the load when the load is connected into the day rate meter, and a second switch means for connecting the load to the off-peak load rate meter when another predetermined condition occurs, and a common operator for said first and second switch means responsive to refrigeration requirements.

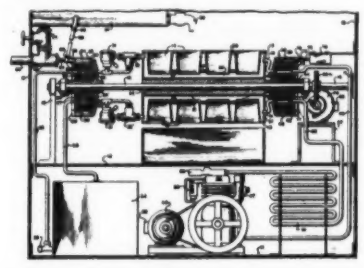
162,474. REFRIGERATOR CABINET. Charles W. Sanders, Greenville, Mich., assignor to The Coolerator Co., Duluth, Minn., a corporation of Minnesota. Application Sept. 22, 1950, Serial No. 12,295. Term of patent: 7 years. (Cl. D67—3.)



The ornamental design for a refrigerator cabinet, substantially as shown and described.

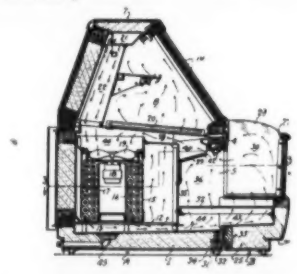
Week of March 20

2,545,558. ICE MAKING MACHINE. Robert D. Russell and William Le Roy Ihly, St. Petersburg, Fla. Application June 26, 1947, Serial No. 757,250. 7 Claims. (Cl. 62—2.)



1. An automatic ice making machine comprising a rotatable support provided with a plurality of circulation chambers, ice cube forming cells in heat exchange relation with each of said circulation chambers, the cells being arranged in oppositely opening pairs relative to the axis of rotation of said support, means for rotating said support to bring said cells into upwardly opening position, refrigeration means, means for coupling warm liquid refrigerant therefrom to each chamber when the cells in heat exchange relation therewith open downwardly, means for conducting refrigerant from the chamber associated with the downwardly opening ice cube cells through expansion means to the chamber associated with upwardly opening cells.

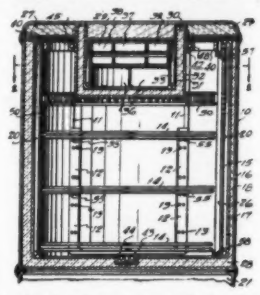
2,545,602. MULTIPLE PURPOSE REFRIGERATED CASE. Ralph J. Burger, Kendallville, Ind., assignor to McCray Refrigerator Co., Kendallville, Ind., a corporation of Indiana. Application Aug. 17, 1949, Serial No. 110,775. 10 Claims. (Cl. 62—89.5.)



1. In a case of the class described, which combines a cold storage compartment and a display compartment together with means for cooling and circulating air therethrough in a continuous circuit, the provision of an open-top refrigerated display compartment at a side of the cold storage compartment and exposed to the air that is cooled and circulated by said means whereby a portion of the cooled air is by-passed from the lower portion of the storage compartment and circulated through said open-top compartment and then returned to the refrigerating means.

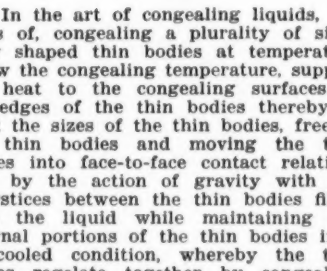
2,545,749. REFRIGERATOR CABINET STRUCTURE. Walter H. Pusch, Fort Worth, Tex. Application March 1, 1948, Serial No. 12,215. 7 Claims. (Cl. 62—89.)

1. In a refrigeration unit, the combination with a cabinet having a cylindrical interior wall and an opening for accessibility and a hinged door for said opening, a rotatable rack supporting frame operatively arranged in said housing, the said frame comprising a plurality of vertical standards connected at their upper ends by concentrically arranged circular frame members, the innermost of said frame members providing an upper bearing a



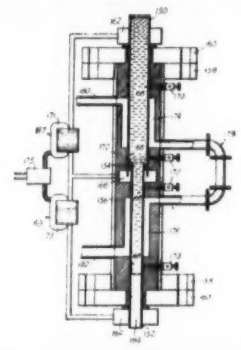
central pivot pin arranged in the bottom of said support and connected to the said standards by horizontal radial arms and providing a lower pivot for said rack supporting frame, means formed in each of said standards for supporting racks in said frame, and a sliding transparent closure for said cabinet adapted to be operated independently of said door.

2,546,005. ICE-FLAKE MACHINE. Frank W. Knowles, Seattle, Wash., assignor to Beltice Corp., a corporation of Washington. Application Dec. 3, 1943, Serial No. 512,701. 4 Claims. (Cl. 62—106.)



3. A refrigeration device, comprising; a drum; an endless belt around and in contact with said drum, the length of said belt being greater than the circumference of said drum so that a portion of said belt is out of contact with said drum; means for taking successive portions of said belt out of and back into contact with said drum to form engaged and disengaged portions of said drum and belt; means for establishing a temperature differential between an engaged portion of said drum and a disengaged portion of said drum, said previous means comprising shields and a fluid supply conduit for supplying to and confining to such disengaged portion of said drum a fluid at a temperature high with respect to the temperature of said engaged portion of said drum to establish said temperature differential.

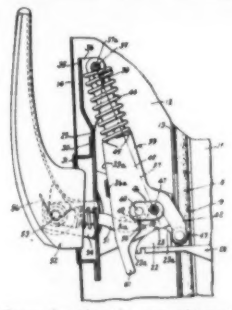
2,546,092. METHOD AND APPARATUS FOR MANUFACTURING ICE. Crosby Field, Brooklyn, N. Y., assignor to Flakice Corp., Brooklyn, N. Y., a corporation of Delaware. Application May 16, 1945, Serial No. 593,983. 16 Claims. (Cl. 62—172.)



1. In the art of congealing liquids, the steps of, congealing a plurality of similarly shaped thin bodies at temperature below the congealing temperature, supplying heat to the congealing surfaces at the edges of the thin bodies thereby to limit the sizes of the thin bodies, freeing the thin bodies and moving the thin bodies into face-to-face contact relationship by the action of gravity with the interstices between the thin bodies filled with the liquid while maintaining the internal portions of the thin bodies in a sub-cooled condition, whereby the thin bodies regelate together by congealing the liquid between the thin bodies by virtue of the internal sub-cooled condition of the thin bodies.

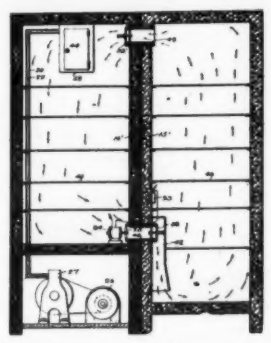
Week of March 27

2,546,333. REFRIGERATOR DOOR LATCH. George E. Curtiss, Jr., Penn Wynne, Pa., assignor to Philco Corp., Philadelphia, Pa., a corporation of Pennsylvania. Application May 25, 1948, Serial No. 28,987. 4 Claims. (Cl. 292—332.)



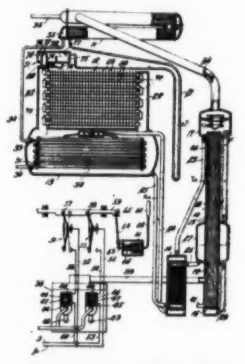
1. In a door latch, the combination with support structure of an elongated latch member adapted for interlocking engagement at one end with a keeper, means mounting the latch member for simultaneous oscillatory and longitudinal movement with respect to said structure, and means to control the oscillatory and longitudinal movements of said latch member so as to cause said latch member to move between a retracted position with respect to the keeper and an extended position in which said latch member is in interlocking engagement with the keeper, said control means comprising a spring exerting force tending to advance the latch member into the said extended position, and means guiding the movement of said latch member, said guide means comprising an element having a portion adapted to react against said support structure, and another portion—spaced from the first mentioned portion—normally engaging said latch member in a manner to effect arcuate movement of the latch member from said retracted position to said extended position with progressively amplified force under the influence of said spring, the engagement between said element and said latch member further being such as to permit substantially straight line movement of said latch member independently of said element, said straight line movement being from extended position out of latching engagement with said keeper to extended position in latching engagement with said keeper, and said guide means further including fixed structure guiding said latch member in said straight line movement.

2,546,363. AIR CIRCULATION CONTROL FOR REFRIGERATORS. Edward B. Jaeger, Chicago, Ill. Application Oct. 19, 1946, Serial No. 704,458. 6 Claims. (Cl. 62—2.)



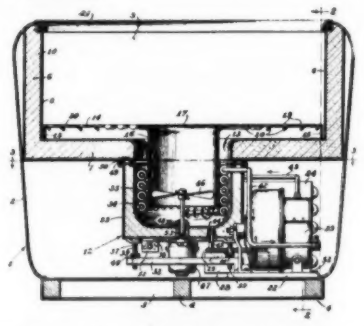
1. Refrigerating apparatus including: a master refrigerator having a cooling unit; an auxiliary refrigerator lacking a cooling unit and communicating with the master refrigerator; a resilient closure for the communication between the two refrigerators; an electrically operated pump adapted to overcome the closing pressure of the closure and cause flow of air between the refrigerators; and a thermostat in the auxiliary refrigerator controlling the operation of the pump.

2,546,382. AIR CONDITIONING. Norton E. Berry, Newburgh, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Feb. 2, 1946, Serial No. 645,088. 19 Claims. (Cl. 62—129.)



1. In an absorption refrigeration system of the type which operates in a partial vacuum and utilizes water as a refrigerant and a salt solution as an absorbent, an evaporator having a plurality of sections through which refrigerant flows by gravity, means for supplying refrigerant, a refrigerant divider above the evaporator and adapted to receive refrigerant from the supplying means, a connection between the refrigerant divider and one section of the evaporator for delivering refrigerant thereto at a predetermined rate, and another connection between the divider and another section of the evaporator for delivering refrigerant thereto when the liquid in the divider rises above a predetermined level.

2,546,417. REFRIGERATING APPARATUS FOR BEVERAGE COOLERS. William E. Anglin, Dallas, Tex. Application May 14, 1948, Serial No. 27,104. 15 Claims. (Cl. 62—141.)



1. In refrigerating apparatus of that type which includes a refrigerated chamber above a laterally accessible compartment for receiving a refrigerating unit, said refrigerated chamber having a bottom wall with an opening therethrough communicating with said compartment, a refrigerating unit for said refrigerated chamber housed in said compartment comprising a motor-compressor-condenser component and an evaporator coil component with refrigerant conduit connections between said components, said refrigerating unit being removable or replaceable as a unit laterally from or into said compartment without breaking said connections, said coil component including an annular coil and a closure for said opening beneath said coil and between said coil and said motor-compressor-condenser component, said coil being mounted on said closure, a tubular baffle of smaller cross-sectional dimensions than said opening having its lower end extending through said coil having its upper end opening in the refrigerated chamber and a pump within said baffle for recirculating fluid heat exchanging medium past said coil and through said refrigerated chamber, and means for raising said coil component independently of said motor-compressor-condenser component to bring said closure into sealing contact with said bottom wall peripherally about said opening whereby said coil is sealed within said refrigerated chamber while said motor-compressor-condenser component is excluded therefrom.

(To Be Continued)

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6-25-51

Government Contracts

PROCUREMENT INFORMATION

The following is a list of proposed procurements issued by the various indicated U. S. Government procurement offices. This list is compiled and made available daily on a free pick-up basis. Prospective bidders may obtain complete bid sets by a request to **the purchasing office under which the purchase is listed** in the Synopsis. Be sure to identify completely the bid invitation you wish by including in your request the item description, the invitation number or reference number and the opening date. This will save time in filling your request. For reasons of economy, specifications are normally not included with the bid invitations unless the specification is a new one. First time bidders on a particular item should request a copy of applicable specifications and drawings at the time the request for a bid set is made.

DEPARTMENT OF DEFENSE

It is not necessary to refer solely to the issuing office for additional data on a bid invitation issued by any of the following U. S. Army Ordnance Offices: Ordnance Tank Automotive Center; Detroit Arsenal; Frankford Arsenal; Picatinny Arsenal; Raritan Arsenal; Rock Island Arsenal; Springfield Armory; Watertown Arsenal; and Watervliet Arsenal. Complete information on any purchase listed by any of those offices alone can be obtained from the Ordnance District Office nearest you. Its address is on file in your nearest Department of Commerce Field Office. Do not ask an Ordnance District Office for information on a purchase unless it is listed by one of the above-named offices. **Ordnance District Offices do not have information on any other purchases.**

Description	Quantity	Reference No.	App. Bid Date
District Public Works Office Headquarters, Fifth Naval District, U.S. Naval Base, Norfolk 11, Virginia			
Air conditioning officers club at Naval Air Facility, Chincoteague, Virginia. Deposit of $10 required for plans and specs.		30090	26 June 51
Commanding Officer, Chemical Corps Procurement Agency, Army Chemical Center, Maryland			
Centrifuge - refrigerated - International model PR-1- for 115V-60 cycle AC complete with motors and timer - International Equipment Co., Cattm 180, or equal - spare parts centrifuge tube - metal shields and conical head spare parts quantity 1 to 24 items	1	51-818-E	25 June 51
Supply Officer, Philadelphia Naval Shipyard, Philadelphia 12, Pennsylvania ATTN: Purchase Section			
Thermometers - distant reading - in accord w/spec	125	Ships-NR 79	3 July 51
Gage - pressure - in accord w/spec	451	Ships-NR 82	3 July 51

GENERAL SERVICES ADMINISTRATION

Description	Quantity	Invitation No.	Opening Date
General Services Administration, Federal Supply Service, Room 528, U. S. Court House, 219 South Clark Street, Chicago 4, Ill.			
Electric water coolers	1240	CHD-32907	6-25-51
Office Of The Regional Director, General Services Administration, 1800 Fidelity Building, Kansas City, Missouri			
Ice cube making machines	1	KC-16128	6-26-51
Chilled water system, Kansas City, Mo. Post Office		CR 338	7-6-51
Regional Information Officer, Region 3, General Services Administration, Washington 25, D. C.			
Cooling tower, 5-ton	2	1383	6-27-51
Air conditioning units, GSA Spec. 2024	3	1383	6-27-51
Air handling unit	1	1389	6-25-51
Sweeper, electric, tennant	1	1389	6-25-51
Cooling tower	1	1389	6-25-51
Cooling towers	2	1395	6-26-51
Cooler, water, ice-cooled inverted bottle type, GSA Spec. No. 2131, dated 2-20-51, to be packed one to carton /Do rating 97, reg. 4 applies/	40	10W-688-R	6-29-51
General Services Administration, Regional Information Officer, Room 528, U. S. Court House, Chicago 4, Illinois.			
Electric water coolers	248	CHD-2008	6-29-51
Refrigerators, household type, gas operated	14	CHD-1016	6-27-51
Refrigerators, electrically operated, various kinds	126	CHD-1016	6-27-51
Refrigerators, blood bank type, electrically operated	2	CHD-1016	6-27-51
Cabinets, storage electrically operated	39	CHD-1016	6-27-51
Electric water coolers of the types and sizes hereinafter indicated, to be in accordance with Federal Specification OO-C-566b, dated July 31, 1947		CHD-2008	29 June 51
Regional Information Officer, Region No. 2, General Services Administration, 250 Hudson Street, New York 13, New York			
Rental of water coolers, Philadelphia, Pa., 16th and Chestnut Sts., period 7-1-51 to 6-30-52		NY-BM-2-141	6-28-51

CONTRACTS AWARDED AS OF JUNE 6, 1951

U. S. Navy Purchasing Office, Washington 25, D. C.

Coolers, drinking water, electric, etc.—Westinghouse Electric Corp., 1225 K Street, N. W., Washington 6, D. C.

Navy Department, Aviation Supply Office, Oxford Avenue and Martins Mill Road, Philadelphia, Pa.

Copper tubing—The American Brass Co., Waterbury 88, Conn.

Ships Parts Control Center, Naval Supply Depot, Mechanicsburg, Pa.

Repair parts for refrigeration equipment.—York Corp., 1616 Walnut St., Philadelphia 3, Pa.

Corps of Engineers, U. S. Army, North Atlantic Division, Philadelphia District, 121 North Broad Street, Philadelphia, Pa.

Fans, air circulating.—LeJohn Manufacturing Co., Twenty-Second Street and Second Avenue, Huntington, West Virginia.

CONTRACTS AWARDED AS OF JUNE 13, 1951

Armed Services Medicine Procurement Agency, 84 Sands Street, Brooklyn 1, New York

Cooling Unit, Tank, Developing, Radiographic Tank, Wash, Auxiliary—Bar-Ray Products Inc., 209, 25th Street, Brooklyn 32, New York.

U. S. Navy Purchasing Office 180 New Montgomery Street, San Francisco 5, California

Refrigeration Equipment—Ray Winthers Co., 1245 Folsom Street, San Francisco, California.

Ships Parts Control Center, Naval Supply Depot, Mechanicsburg, Pa.

Valves and repair parts—Hajoca Corp., 917 - 15th St., N.W., Washington 5, D. C.

Headquarters, Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio

Heat exchangers, cl-03F—Airesearch Mfg. Co., Los Angeles, Calif.

Valve and hose assy, cl-13C—The Bastian Blessing Co., Chicago, Illinois

Chicago Quartermaster Depot, U. S. Army, 1819 West Pershing Road, Chicago 9, Illinois

Refrigerator, mech. cooled—Frigidaire Sales Corp., Dayton, Ohio
Chilled water unit—Filtrine Mfg. Co., Brooklyn, New York.

Carrier To Supply Centrifugal Units For Ontario Refinery, Rubber Plant

SYRACUSE, N. Y. — Five large centrifugal compressor units have been ordered from Carrier Corp.'s International Division for a major new high octane refinery and an adjacent synthetic rubber plant in Ontario, Canada, Carrier officials announced.

It is believed that both plants will contribute importantly to present defense needs.

The new refinery will be erected for Canadian Oil Refineries Ltd., at Froomfield, Ont. In addition to high octane components for motor fuel and aviation gas, it will also produce butane and propane, and certain light hydrocarbons for synthetic rubber manufacture.

The hydrocarbons will be delivered to the nearby synthetic rubber plant of Polymer Corp. Ltd., at Sarnia, Ont., which has scheduled an expansion program designed to increase its productive capacity by about 25%.

The increased capacity will enable the plant to help supply mounting rubber requirements in Canada, the United States, and western Europe. The Polymer Corp. is operated by the Canadian government.

Two Carrier centrifugal gas compressors and a centrifugal refrigeration machine will be used in Canadian Oil Refineries' fluid catalytic cracking unit and light end recovery unit. Construction of the first processing units, providing capacity for processing 20,000 barrels of crude a day, will start this spring. The entire refinery is expected to be completed by the spring of 1952.

Two centrifugal refrigeration machines of 700 tons capacity driven by 1,500-hp. steam turbines will be installed in the Polymer plant. The machines are the largest ever sold by Carrier's International division. They will be used to chill brine to -10° F. for the manufacture of butyl and butadiene for synthetic rubber, and of styrene for plastic materials.

The gas compressors ordered for the oil refinery will serve as the main air blower in the fluid catalytic cracking unit, and as the overhead gas compressor, recompressing the gases for the light end recovery unit. The centrifugal refrigeration machine will be used to cool absorbers and to condense separated fractions in the light end recovery unit.

The function of the main air blower is to supply the motive force for circulating the catalyst from the reactor, where the raw oil breaks down into fractions, to the regenerator. The stream of air also provides an oxygen supply for regeneration of the catalyst, and aids in pressurizing the system up to the point where the overhead gas compressor takes over.

The Carrier blower will handle 31,600 c.f.m. of air from a suction pressure of 14.1 p.s.i.a. to a discharge of 38.7 lbs. It will be direct-connected to a 3,120-hp. steam turbine turning at 4,650 r.p.m.

The overhead gas compressor will take 5,150 c.f.m. of light end gases at 18 p.s.i. suction, compressing them to 110 p.s.i. discharge, in order to facilitate recovery. This compressor has a cast steel shell, and is direct-connected to a 1,250-hp., 8,500-r.p.m. steam turbine.

The centrifugal refrigeration machine, which is driven by a direct-connected 400-hp. steam turbine, will supply 350 tons of refrigeration at 35° F. suction temperature through a set of direct expansion coils.

All electrical equipment for the centrifugal units in both plants has been made explosion-proof.

Contracts for the oil refinery centrifugal units were placed with Carrier Engineering Ltd., Carrier Corp.'s Canadian subsidiary, through Canadian Kellogg Ltd., which is building this portion of the plant for Canadian Oil Refineries Ltd.

Contracts for the rubber plant were placed through Stone and Webster Engineering Corp., project manager for Polymer's expansion program. Both plants are located in the Great Lakes region near Detroit.

RSES Honors George Frie For Distinguished Service

TRENTON, N. J. — Highlighting the annual installation dinner of the Trenton section, Refrigeration Service Engineers Society, was the presentation of a $1,000 check to George Frie, a founding member of the Trenton RSES and a 30-year man with the Kramer Trenton Co. here.

In making the presentation, Harry Jaeger, toastmaster, said, "In honor of George Frie's 30 years' service with the Kramer Trenton Co., the Kramers have consented to make available to this chapter a check for $1,000 to be presented to George Frie as an award for distinguished service to RSES and the entire refrigeration industry."

New officers installed at the annual banquet included Henry Guear as president; Henry Van Langen, vice president; Richard Yates, secretary; and Walter Hefty as treasurer. Franklin Beemish was in charge of arrangements.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $5.00 per insertion. Limit 50 words. 10¢ per word over 50.

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POSITIONS WANTED

SALES MANAGER now with nationally known manufacturer desires to relocate with larger manufacturer in need capable sales representative for direct sales contacts with manufacturers of original equipment. Broad experience, engineering background, well-known in industry. Willing to locate any section, free to travel. A-1 references. BOX 3758, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

DESIGN ENGINEER with refrigeration air conditioning experience, must be good draftsman, familiar with manufacturing and tooling. Excellent opportunity in large compressor field. Write BOX 3754, Air Conditioning & Refrigeration News.

SALES ENGINEER—Air conditioning and commercial refrigeration distributor located in Detroit has opening for successful retail sales engineer. Excellent opportunity for right man. Permanent position. Salary plus commission. Prefer Detroit resident. Write full details. BOX 3756, Air Conditioning & Refrigeration News.

AIR CONDITIONING salesman wanted. Southern Arizona York Distributor wants aggressive, proven man to supplement present staff. Earnings commensurate with record on salary and/or commission basis as preferred. Area highly competitive—but potential vast due to climate. State fully qualifications, status, earnings expected in initial application. Write BOX 3759, Air Conditioning & Refrigeration News.

MANUFACTURER'S REPRESENTATIVE to represent an old, responsible manufacturer of a complete line of frozen food display cases, beverage coolers, walk-ins, reach-ins, home and farm freezers and meat display cases. This is a profitable opportunity. Give qualifications. Write to BOX 3760, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

FOR SALE: Prominent Brands Condensing Units. 10 HP Model ATC10, $795.00; 3 HP Units, $375.00; ¾ HP Units, $200.00. Terms 20% with order, balance sight draft. HAINES FOOD MACHINES, 501 E. Third Street, Dayton, Ohio.

COMPRESSOR BODIES, brand new; model #19 good up to 1-HP, @ $38.; includes flywheel and service valve. The last of a large quantity. Also standard brand temperature control, $3.85. Pressure control, $5.00. Write for full particulars. First come, first served. MANN REFRIGERATION SUPPLY CO., 15 Astor Place, NYC, GRamercy 3-8000.

¼-HP open and sealed type prominent brands condensing units complete; brand new; limited quantity; act now; $52. each FOB New York; write for specifications other sizes also available; MANN REFRIGERATION SUPPLY CO., 15 Astor Place, New York 3, N. Y.

FOR SALE—while they last—standard makes—new hermetic units—static & fan-cooled cond. ⅛, ⅙, ⅕, ¼, ⅓. Open Units—¼—⅓—½. Relays—⅛—⅙—⅕—½—also overload protectors. #673 Methyl T.X.V. Capacitors in jet-black steel case 190-240 mfd. Small hermetic driers. ¼" fl.—7½" overall Driers. Household Cold Control—w/Knob & plate. Also other parts and supplies. Send for our latest list and prices. Sold on money back guarantee. WALTER W. STARR, 2833 Lincoln Ave., Chicago, Ill.

BUSINESS OPPORTUNITIES

FOR SALE: Manufacturing plant in northern Ohio. Modern brick building, 12,500 square feet of floor space. Sheet metal, woodworking tools and paint spray booth and drying room. One block from railroads. Plant now engaged in some defense work beside manufacturing refrigeration equipment necessary to the defense effort. Owner desires to sell buildings, equipment, inventory and business at once. Inquire—J. W. FRYE CO., Brokers, Rittman, Ohio.

FOR SALE: Store fixture company and supplies for restaurants, cafes, market equipment. With trucks and refrigeration shop. Established, profitable business. Located in large industrial city of Pittsburgh, Penna. Good clean stock, approximately $35,000.00. Owner retiring due to bad health, can prove it. Pays to investigate. BOX 3755, Air Conditioning & Refrigeration News.

FOR SALE: Established commercial refrigeration and air conditioning business near Pittsburgh. Gross $80,000 to $100,000 per year. Very good locality & franchises. Will sacrifice trucks, parts and equipment, $15,000.00. BOX 3761, Air Conditioning & Refrigeration News.

MISCELLANEOUS

NORGE SEALED units remanufactured and exchanged. Immediate delivery from stock, 1 year warranty. Write for prices and shipping instructions. Genuine Norge terminals for Norge sealed units. Complete set of three, $1.15 plus postage. MODERN REFRIGERATION CO., Inc., 12541 E. McNichols Road, Detroit 5, Michigan.

Farr Co. Moves to New Plant at El Segundo

EL SEGUNDO, Calif.—Completion of the new Farr Co. main factory and office building here was announced recently by R. S. Farr, president. Movement of the company from its present factory on Southwest Drive in Los Angeles is now completed and full production has resumed.

The new plant, necessitated by business growth, has more than doubled the former manufacturing area.

The modern brick building was especially designed for the development and the production of Far-Air filters, evaporative coolers, railroad grilles, diesel engine air filter assemblies, and allied air conditioning equipment which are manufactured and sold nationally by the company.

Facilities in the new plant include modern executive and general offices, a research laboratory that is one of the most complete in the industry, a spacious engineering and designing department, as well as specially-planned, efficient manufacturing areas.

The plant is located on a 10-acre site on Rosecrans Ave. near Aviation Blvd., has a floor area of approximately 50,000 sq. ft. and presently employs about 100 people. Further expansion on the same property is planned for the future.

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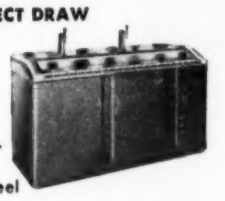

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OPS Meat Ceilings--

(Concluded from Page 1, Column 5)

store operation in Hastings, Mich.

Although Hastings is a town of only 6,000 population, Feldpausch had found a way to add considerably to its meat department volume by serving home freezer owners.

Feldpausch has a 12-ft. by 20-ft. low temperature cooler in his store, and its own poultry processing facilities. It buys, processes, and freezes beef for home freezer owners at an assured profit per pound.

The store has sold as much as a carload of beef at a time on this basis of processing and freezing for home freezer owners.

"We go after this business aggressively because it's good business," Feldpausch said. "We have a list of home freezer owners and call them or mail them a notice when we can get a good buy."

Other discussions at the meeting recognized the growing trend to refrigerated self-service, both for meats and produce.

In describing his store Feldpausch pointed out that he has 34 ft. of service cases and 33 ft. of self-service cases, but does more than two thirds of his business in the self-service variety.

"We'd go 100% self-service if I were sure packaging supplies were to be available," he said.

$5 Price Reduction On Duchess Washers

ALLIANCE, Ohio—The Appliance Mfg. Co. here has reduced prices on all models of Duchess washers, according to F. W. McGrath, vice president in charge of sales. The reductions are $5 from the prevailing list, but discounts are improved.

The price reduction, McGrath stated, was not because of any duress from CPR or other governmental pricing agency. The previous prices could have been fully substantiated by current costs. It is a move to beat inflation.

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WHOLESALERS IN PRINCIPAL CITIES

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0° F. Required To Maintain Quality Of Frozen Citrus Juices, TRRF Finds

COLORADO SPRINGS, Colo.—"For maintenance of original quality, frozen concentrated citrus juices—orange, grapefruit, tangerine, orange-grapefruit blend—require consistently maintained temperatures of 0° F. or lower, according to present knowledge."

So summarizes the Refrigeration Research Foundation here in an analysis of the subject.

"The problem that causes probably the greatest concern in this industry at present is the possibility that the concentrated product (during transit, or as a result of any unforeseen exigency) temperatures will reach a level above 0° F. and remain there for some time, and that adequately low temperature will not be recovered later in order to bring the product temperature quickly again to the desired level.

"Short periods of exposure to various temperatures above 0° F. tend to shorten storage life, even though the temperature is returned to 0° F. or lower, according to present knowledge," states TRRF.

WILL HOLD FOR A YEAR AT 0° F.

By maintaining storage temperatures consistently at 0° F. or lower, storage of this product can be extended to at least a year, but generally storage in public warehouses is limited to several months at the present time, TRRF adds.

The rapid growth of the frozen concentrated citrus juice industry from its beginnings five years ago to an annual volume of 20,000,000 gals. of concentrate is "almost unbelievable," according to the research organization.

In its review of the problem, TRRF points out that "frozen citrus concentrates, like most other frozen foods, have not been heated during processing and packaging. In fact they are concentrated under a vacuum that causes moisture to boil off at temperatures well below room temperature—in fact below 60° F. The physical properties of the juice, particularly the minute particles that constitute the 'cloud' of fresh juice, remain intact.

"To enhance appearance, flavor, and aroma, some single-strength juice is blended with the concentrate. The natural enzymes are present, and the only way presently known to prevent their destruction of this desirable cloud, with resulting settling or separation, is to maintain the temperature at 0° F. or below. At this temperature there is some enzymic activity but so little that storage life can extend for a period adequate for all commercial operations," explains TRRF.

LOSS OF 'CLOUD' REDUCES QUALITY

"Where there has been a slight loss of the 'cloud' only, the consumer is often probably not aware of this as he reconstitutes the concentrate with water and shakes or aerates it just before use. But if the reconstituted juice stands, the loss of 'cloud' (with a clear liquid portion appearing) becomes noticeable and is undesirable. With loss of 'cloud' there seems also to be a gradual loss of juice quality.

"All constituents are concentrated in this product. There is thus greater possibility of other chemical changes, such as corrosion of can metal and loss of volatile flavor and aroma, than there would be if the product were not so concentrated and not so nearly in the strictly fresh and natural state. This product solidifies at 17° to 18° F. Storage at 0° F. keeps it in a firmly solid state, in which it must be maintained if success is to be realized. At 0° F. or lower, there is no significant can corrosion problem in a year's time; at 10-15° F., some corrosion may occur in a couple of months.

BACTERIOLOGICAL FACTOR SLIGHT

"Bacteriological factors do not seem to be involved in the storage life of frozen citrus concentrates. The very careful measures applied in this industry to maintain sanitation and the continuous low temperatures at which products are held from the initial to the final stages of processing have kept bacteriological factors from becoming involved in storage. The chemical factors mentioned above are, however, extremely important," TRRF emphasizes.

"So far as storage management is concerned, the usual procedures and precautions for good frozen food storage are applicable. Temperature must be maintained at 0° F. or lower throughout the stacks and throughout the period of storage. It is quite obvious that handling in and out must assure the least possible loss of low temperature. Inspection of shipments on arrival is important.

"Undoubtedly most, it not all, companies engaged in the manufacture or distribution of these products want an immediate report of any variation from adequate temperature or other abnormal condition that might be present. Such measures as use of floor racks, stacking away from walls and other precautions to assure uniform, well distributed low temperature are of course required.

"Research and industrial experience have indicated that storage life at 20° to 25° is limited to about 15-20 days; at 10° to 15° F. it is limited to a few weeks; and at 5° F. it is limited to only a couple of months. These facts serve to emphasize the importance of good cold storage and also the importance of the time element in relation to storage temperature effects. Higher product temperatures than 0° F. (let's say 10-15° F.) for very short periods probably are not markedly significant in causing deterioration, if the product temperature is quickly reduced to 0° F. or below."

David Feinberg Becomes UsAirco Vice President

MINNEAPOLIS—David E. Feinberg has been appointed a vice president of United States Air Conditioning Corp. here, the company announced.

D. E. Feinberg

Feinberg has been since 1949 the manager of the company's refrigeration division, which is responsible for engineering, manufacture, and sales of refrigeration products, and is also serving as coordinator of UsAirco's defense production activities.

A graduate of the University of Minnesota, Feinberg has been associated with the corporation since 1940, with the exception of a three-year period during which he served with the Army Air Force.

Major Appliance Gets Order

OMAHA, Neb.—Contracts for 402 gas ranges and an equal number of electric refrigerators for Omaha Housing Authority projects have been awarded to the Major Appliance Co. of Omaha.

The company bid $21,331.20 on the ranges and $49,345.50 on the refrigerators. David Beber, OHA counsel, said a lower bid by another firm on the refrigerators was rejected because of differences in warranties and storage terms.

ACRMA Elects Smith--

(Concluded from Page 1, Column 2)

Div. of General Motors Corp. During World War II he headed the special equipment branch of the War Production Board.

In addition to the officers, the following were elected to the ACRMA board of directors:

W. H. Aubrey, Frick Co., Inc.; J. DeFino, Fedders-Quigan Corp.; Maynard Ford, Parks-Cramer Co.; W. Hanson, Schaefer, Inc.; George S. Jones, Jr., Servel, Inc.; S. E. Lauer, York Corp.; M. M. Lawler, Worthington Pump & Machinery Corp.; F. F. Lehman, Frigidaire; A. B. Newton, Acme Industries, Inc.; A. P. Shanklin, Carrier; T. E. Smith, Westinghouse Electric Corp.; A. O. Vogel, The Vilter Mfg. Co.; G. E. Wallis, The Creamery Package Mfg. Co.

Featured speakers at the association's annual meeting and luncheon were R. A. Whitney, president of the National Sales Executives, who spoke on "The Job Ahead for American Business," A. Gordon Wootton and Sterling Smith of the National Production Authority, and D. H. Reynolds of the Machinery and Allied Products Institute.

Defense Dept. Activates 2 Bases

WASHINGTON, D. C. — A destroyer base will be established by the Navy at Goat Island in Newport Harbor, R. I., the Department of Defense announced recently.

It also reported that the Army will reactivate Fort Banks at Winthrop, Mass. for the use of anti-aircraft artillery units.

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